A NEW TREATISE OF ARITHMETICK AND *BOOK-KEEPING.*

CONTAINING

I. ARITHMETICK: Wherein the Theory and Practice are mixt together after a New Method. The *Practical Part* is largely insisted upon; no Instance of ordinary Use being omitted, and many Things delivered, both Useful and Curious, particularly upon the Subject of Interest *Simple* and *Compound*; the Value and Purchase of Annuities and Leases, and the Calculation of Foreign Exchanges, *&c.* which have either not been handled at all, or not so fully in practical Books. The THEORY is carried on with the PRACTICE in a regular Manner; wherein the *fundamental Principles* of the *Science* are plainly exposed, and the true *natural Reason* of every *Practice* clearly *demonstrated*, and set within their Reach who are Strangers to the *Mathematicks*.

II. BOOK-KEEPING: In which the *first Principles*, and *fundamental general Notions* and *Rules* of that admirable *Method* of *Accompts* by Debtor and Creditor, are fully explained; and from these are deduced the particular *Rules* in Application to *Merchants Accompts*, both great and small Traders, whether they act for themselves, for others their Factor, or for themselves and Company; and this last explained with a great and useful Variety.

THE whole illustrated with Two Set of Books filled with *Examples* of *fictitious Trade*, such as may, and does most ordinarly occur. The *Instructions* are delivered in a Method *perfectly New*, and such as may make the Thing plain and easy to enter the Conception of Persons of any Thought, and enable them to apply it to any other Subject; and to put them in the *Way* of this *Application*, there is a large *Instruction* for *Gentlemen* of *Land-Estates*, and their *Stewards* or *Factors*; how the *First* may keep their own *Accompts*, and how the *Latter* may be able to make a fair *Accompt* to their *Employer*.

See the Scheme *of this Work more largely in the Preface*

By ALEXANDER MALCOLM Teacher of the said Arts in *Edinburgh*.

Recommended by the most famed Accomptants *in* North-Britain.

EDINBURGH:

Printed by John Mosman and William Brown, for JOHN PATON Bookseller and are to be sold at his Shop in the *Parliament-Closs*. M.DCC.XVIII.

A NEW

TREATISE

OF

ARITHMETICK

AND

BOOK-KEEPING.

CONTAINING

MVSEVM
BRITAN
NICVM

To the Right Honourable,

William Neilson *Esq*; Lord Provoſt.

John Duncan,
John Hay,
James Grant,
Alexander Arbuthnot,
} Baillies.

John Wightman, Dean of Guild.

Robert Wightman, Treaſurer.

Patrick Turnbull, Deacon Conveener.

And the remanent Members of the Honourable Council of the City of Edinburgh.

Right Honourable,

YOUR Stations juſtly intitle *You* to be the common *Patrons*, *Guardians* and *Protectors*, of every one within this City; and as I could be in no Strait where to make my *Addreſs* upon this Occaſion, conſidering *Your Characters*, either Publick or Private, and the Nature and Deſign of the *Work*; ſo I am ready to think, I need no *Apology* for this Trouble: For, to whom elſe can, or ought he to go, who would recommend himſelf for a *Well-Wiſher* to the *Publick*? And I dare be the more confident of *Your* Acceptance,

and the Success of what I have done, that I can offer it with the *Approbation* of GENTLEMEN of unquestionable *Capacity* to *Judge*; some of whom are distinguished *Members* of the *Honourable Council*.

IT has always been, and in the Nature of Things cannot fail to be, the *sure Mark* of a flourishing and polite *People*, that *Learning* and *Arts* are regarded among them. To this I owe my Encouragement in this Place, and the freedom I have of living among *You*, and employing my Time in the mutual Service of my Fellow-Creatures and my self, without the Necessity of any other *Right* than that of *good Behaviour*. And since I have not another *Way* of being *Grateful*, I must not let go this Opportunity of expressing, the earnest Concern I have for the *Prosperity* of the *Metropolis* of my *Native Kingdom*, in wishing her Happy under *Your* Management, and *You* a Return of *real Honour*, from the approved *Labours*, and generous *Care*, which has been seen, and no Body doubts to see, bestowed in prosecuting the Duties of *Your* eminent Stations.

Y

I am,

Right Honourable,

Your Lordship's, &c.

most obedient and devoted

humble Servant,

ALEX^R. MALCOLM.

To Mr. Alexander Malcolm.

Ingenious Sir,

IN the few Days you have ſpared from the timeous publiſhing of your Treatises of Arithmetick and Book-Keeping, *we have had Opportunity ſo far to peruſe both, as to form a Judgment of them: And without Flattery we may adventure to ſay, that your* Plan and Deſign is well digeſted, and the whole delivered in eaſy, clear and diſtinct Terms. *We are ſatisfied that the* Idea *you give of the Work in your* Preface *is juſt, and therefore ſhall not be particular. Both Parts, we think, are ſo handſomly managed, that the Work muſt be obliging to the* Publick, *and prove Advantageous to all* Ranks, *and particularly pleaſing to any* ingenious Gentlemen, *who, for real Uſe or Curioſity, are inclined to ſtudy either of the two Sciences.*

We wiſh you and the Work performed by you all Succeſs. We are,

Your ſincere Well-wiſhers,

and moſt humble Servants,

Robert Wightman.
Da. Spence.
Geo. Drummond.

PREFACE TO THE READER.

GENTLEMEN,

I *Thought it very neceſſary, both for you, and my own Sake, to give you the Trouble of this Preface, not to conſume your Time with idle* Apology *for the Book, founded upon an affected* Modeſty; *I frankly own, I wiſh, and expect to ſerve others, and my own Intereſt too, by what I have done, which is the true Reaſon I either wrote or publiſhed it, how it will anſwer, is more than I yet know; but the Deſign of this Preface is to give you* a general Scheme or View of the following Treatiſe, *the Subject whereof is* Arithmetick and Book-Keeping. *The Experience of the Wiſe and induſtrious Part of Mankind takes off the Neceſſity of a formal and grave Commendation of theſe Arts; their* Value *and* Uſefulneſs *is ſufficiently proven, therefore I am ſecure as to the* Subject; *and ſhall only beg your Patience, to hear what a Perſon of Honour has ſaid with Reſpect to* Book-Keeping, *who thought it not below him to be Author of a* Treatiſe *upon* this Subject, *under the Title of* THE GENTLEMAN ACCOMPTANT, *ſpeaking of the* Method *of* Accompts *by* Debtor *and* Creditor, *he ſays,* Which Method is ſo comprehenſive and perfect, as makes it worthy to be put among the Sciences, and to be underſtood by all *Virtuoſi*, whether they ever intend to make Uſe of it, or no, even for

for pure Speculation, Curiosity, or rather Admiration, as happens, when with [illegible] Pains we have attained the Knowledge of any Art or Skill, tho less Com[illegible] than this; which through the Inventions of Ages past, universal Practice, and in Matters of Interest (the fiercest Engagements of human Wit and Stratagem) is reduced, as this is, to a consummate Perfection, &c. *therefore he thinks*, that beside the real Value of it in Life, every ingenious Gentleman may have Reason to know this Art as a Sort of human Learning. *I shall detain you no longer upon this Argument, yet before I come close to the Thing designed, I must* answer *one* Question; *perhaps not a few are inclined to ask me*, With what Countenance I could trouble the World with a Repetition of what has been so oft said? *They mean that there are many* Books *upon the* Subject *already; I own it*, but it is as true there are many different Ways of expressing the same Thoughts, and of composing a Treatise upon the same Subject, and the Odds may be so great, as will sufficiently vindicate the Author of a new Book upon an old Subject; *the whole Variety is not yet exhausted, (which I hope you have here a Proof of) the only Question is*, Whether I have fallen upon such a Method, as brings an Accession of Light to the common Subject, capable to balance the Expence and Trouble of a new Book; *if it be found so, the Book will recommend it self, but in that I must be at the Mercy of every Judge, which being the common Fate of Authors, I submit, with this Request*, That you'll read patiently, judge impartially, and give me the common Allowances that ought to be made to Humanity. *I proceed therefore to give you an* IDEA *of the following* WORK. *The first Part is a* Treatise *of* Arithmetick; *this as well as all other Sciences, has both a* Theory *and a* Practice; *the Theory is compleatly explained by such as have written for the Use of* Students *in* Mathematicks, *but the* Demonstrations *are for the most Part* Algebraical, *or at least in a* Method *too* concise *and* difficult *for* ordinary Use: *Others have delivered the* Practice *in* Rules *and* Examples, *for the Use of* plain People, *doing more or less in it according to their* different Designs, *but without* explaining *the* Reason of Things. *Mr.* Hatton *in his* Merchant's Magazine *is the first that I have seen, who designing chiefly the* practical Part, *has mixed the* Theory, *and given* Reasons *for his* Rules; *but beside that he does not carry the* Work *to such a Length, as some may think necessary for* a compleat Course of useful Arithmetick, *his* Demonstrations *are generally of another* Nature *than my* Project *would admit; to cite a* Theorem *of* Euclid, *and conclude from that, is above their Use who know nothing of the* Mathematicks, *such as I design this* Book *for. The Thing which I judged wanting was*, a Treatise containing both Theory and Practice, and the Theory so ordered that it might be within their Reach who are unacquainted with Mathematicks, which requires the most easy and simple Demonstrations, without the Necessity of knowing any other Principle than common Truths, and what the Treatise it self should contain in the natural Order of the Science, Beginning at the first and most simple Things, and building one Thing upon another to the End. *That such a* Work *(if well done) would be acceptable I made no Doubt: For what a Pity is it that Men of good Sense, who have not been taught or applied themselves to* Mathematicks, *and yet have a great* Practice *in* Numbers, *should be forced to work like* Machines, *and be able to*

give

give no Reaſon for what they do. I grant there is no Ground to ſuſpect the Authors *of theſe* practical Rules, *(unleſs we could ſuppoſe an univerſal Conſpiracy of the learned Part to impoſe upon the reſt of the World) and Experience makes Men eaſy and ſatisfied; yet this, at beſt, is but making half Uſe of their* rational Faculties, *and an implicit Knowledge, which ſhould be below the juſt Ambition of* Spirits *capable of* better Things. *To know the true* Reaſon *of any* Rule, *has in it a* pure Pleaſure, *and very worthy of our* Natures; *beſides, the* Advantage *is great as to the* Practice, *for take a Man of meer Practice out of the* Way *of his own* Experience, *and you'll ſoon find how embaraſſed he will be, and uncertain in the* Application *of his* Rules. *Upon theſe Conſiderations I applied my ſelf to write, and have now publiſhed this* Treatiſe *of* Arithmetick, *in which (including the* I. Chapter *of the* Appendix) *I have gone thro' a Courſe of* Arithmetick *in* whole Numbers, *and* Fractions vulgar *and* Decimal, *carrying on the* Theory *and* Practice *together: I have largely explained the* fundamental Parts, *and delivered the* practical Rules *in the moſt perſpicuous and clear Expreſſions I could think of, and at the ſame Time as ſhort and eaſy as the Nature of the following Demonſtrations would allow; in which I have ſhown the Reaſon of every Thing in a plain and eaſy Manner from the moſt ſimple Principles, uſing none other than* Self-evident Truths, *and the bare Definitions of the* Object, *and the ſeveral* Operations in Arithmetick; *by which I have connected the whole in a continued* Explication *of the* Rationale *of* Things. *I don't pretend to have written for Children, or ſuch as never ſaw a* Figure, *as if they ſhould need no other Teacher, but I hope thoſe that know a little, may be able from this to know more, with diligent Application; and thoſe who know better, may learn here the* Nature *and* Reaſon *of their* Work, *and henceforth underſtand what they do. I know nothing of real Uſe that's omitted in the* practical Part, *(and I have delivered many Things leſs common, yet uſeful) a few Things excepted not of ſo* general Uſe, *which required other Principles, and another Method to demonſtrate; of which Kind is the* Extraction of the Square and Cube Roots, *which tho' uſeful for ſome Mechanicks, yet commonly theſe have the Help of particular Treatiſes, calculate for their Work, and with which I had nothing to do. As to the* Calculation of Foreign Exchanges, and the Buſineſs of Intereſt Simple and Compound, and the Value and Purchaſe of Leaſes and Annuities, *wherein there are Things both uſeful and curious, I have endeavoured to be full and plain, to lay open the Nature of theſe Things, and make the Practice as ſhort as poſſible; and have left nothing without* Demonſtration.

The other Part of this Work, is a Treatiſe of Book-keeping, *and here was as great a Cloud of Authors in my Way, who have managed the Subject differently, according to their particular Fancy and Deſigns. Now, every* Author *who offers a* New Book *upon a Subject already handled, may be allowed, I ſuppoſe, to ſay, he has not found in other* Treatiſes, *what he thought ſufficient to prevent him: The very publiſhing his Book declares this, tho' he ſay nothing; and therefore if I tell you, I was not perfectly ſatisfied with the* Methods of inſtructing in this Art, *which I had ſeen already printed in our Lauguage; I hope I have ſaid nothing againſt Modeſty, nor given Offence to any one. The Method I have followed, is this in general: I have taken Care to give you firſt,* a general Proſpect of the Art in its Deſign and fundamental

mental Principles and Rules, *which again I have drawn out into* Application by particular Rules, *explained as clearly, and in as good* Method *as I was capable of; the Sense and Tendency of which you can satisfy your Judgment of, by an* easy Reflection *upon the* general Rules, *whereof they are but the* Illustration *or* Application. *It is certain there are but few* fundamental Principles, *and those not very difficult, upon which this* Method *depends, yet much lies in the right explaining them, and shewing in* clear and distinct Expressions, *the* Extent *of the* first *and* general Rules *of the* Art; *and then the* particular Rules *are no more but* Applications *of the other. And when this can be variously done, and the* general Rules *still observed, these different* Applications *may be called,* The arbitrary Part of Book-keeping, *as the* general Rules *may be called,* The fixt Part; *not but the whole* Method *here taught is* Arbitrary; *but when it is demonstrated to be the shortest and most regular Way of keeping Accompts to answer all the valuable Ends that can be proposed by a* true Method, *I think it becomes after that, in a manner fixt: It is of great Use, to make a Learner sensible of this* Difference; *for thus he comes at last to see the whole Art in its* few simple general Notions and Rules, *and consequently will find nothing else left to burden his Memory with.*

In fine, *Tho' I do not pretend to a* New Art, *yet I have delivered the* Rules *of* Book-keeping *in a* new Way. *I proposed chiefly to explain and clear the* Foundation, *and give such* Rules *and* Directions *as might make the Practice a* Work *of* Judgment *rather than of* Memory; *every Thing in this excellent* Art *has a Reason which may, and ought to be shown: I have endeavoured this in laying down the* first general Principles, *and therefore in the rest I have nothing to do but make every Thing agree to these* fundamental Notions, *and answer the End; which is either manifest at sight, or I demonstrate it as any Difficulty occurs. But to be a little more particular upon the Contents, you have what I call* Instructions *for* Book-keeping *in three distinct* Chapters. *In the first, I have explained the* fundamental Notions, *and given you the* general Rules. *In the Second, I have more particularly taught you the* Application *to* Merchants Accompts, *in a great and useful* Variety of Heads, *shewing how the Books are begun and carried on. I have insisted largely upon* Company-Accompts, *in which the greatest Intricacy lies, and upon which* Part *I found most* Treatises *superficial. And in the third, you see by what* Method *the Whole is closed and shut up again, in Order both to making up a State of the whole Affairs, and for the changing of the Books, or the Transportation of the Accompts from old to new Books, which begin with the compendious State of the Accompts abstracted from the former. After this I have illustrate the whole, with* two Set of Books, *consisting of* Waste-Book, Journal *and* Leger, *filled with a great Variety of practical (tho' fictitious)* Examples *of* Trade *managed for my* own proper Accompt, *for the* Accompt of another *as his Factor, and* lastly *for my* own Accompt and Partners in Company: *Both Books are balanced and closed according to Art, and the* Second Set *regularly begun upon the Balance of the* First. *To this I have annext a* Table of the Variety of Cases *that are contained in the said* Books, *digested in Order according to the several* Heads *they belong to, with the Dates, by which they may be found out in the* Waste-Book, *and be compared as they stand in the* Journal *and* Leger *with the preceeding* Instructi-

ons

ons; *and I doubt not this ſimple* Table *or* Index *to the Caſes of the* Waſte-Books, *may be of very good Uſe, and perhaps equivalent to all the more tedious* Queſtions *and* Anſwers *of ſome Authors; for tho' the* Anſwers *are not in the* Table, *yet you have them to more Advantage in the* Books, *whether you are referred by the Date; beſides all the Explication I have given of the* Rules general *and* ſpecial *in the preceeding* Inſtructions *wherewith to compare them, in Order to know the true Senſe of what is done.*

I have alſo in the II. Chapter *of the* Appendix *added ſeveral uſeful Inſtructions for the Application of* Book-keeping, *eſpecially to the* Concerns *of* private Eſtates, *how a* Gentleman *may keep his own* Accompts, *and how his* Steward *or* Factor *may keep diſtinct* Accompts *of what he manages; to be ready at all Times to anſwer his Maſter's Demands, and render a fair Accompt of his Truſt and Intromiſſions.*

You'll find, it is true, ſeveral Things ſaid in the Inſtructions, *of which I have given no* Examples, *but I did not ſee the Neceſſity of examplifying every Thing: By the Examples that are made, the reſt will be very eaſily applied; for I have endeavoured to manage the Explication of the* general Rules, *ſo that by a due Conſideration of theſe, and the Applications made, you'll be able to apply the Method to any other Caſe or Subject as far as the Nature of the Thing will admit.*

Obſerve 1. *There is a* Queſtion *omitted to be ſet down and wrought in* Page 56, *and yet in* Page 58, *it is referred to as* Queſtion 3d, *and ſtated thus,* 7 Ounce ——16 l.——9 Ounce, *the* Queſtion *is,* If I get 7 Ounce Bread for a Penny, when Wheat is at 16 *l.* the Boll, what is the Price of the Wheat when I get 9 Ounce for a Penny?

2. *At* Page 76, Line 35, *you have a* Rule *relating to ſome Circumſtance of the preceeding* Queſtion, *it begins,*———Therefore in ſuch Caſes, *&c. you muſt alter and read it thus,*——*viz.* Therefore in ſuch Caſes, you muſt, as oft as it falls out ſo, ſubſtract the Payment from the Intereſt due at the Time, and keep the Remainder to be added to the next Sum of Intereſt which is calculate upon the preceeding principal Sum, to the Time of the next partial Payment; and if the Payment is greater than the foreſaid Sum of Intereſt, add the Principal, and that Intereſt, and then ſubſtract; otherwiſe ſubſtract from the Sum of Intereſt alone, and ſo for every ſucceeding Part of the Work.

3. *In the* Leger No. I. *you'll find in ſome Places, that the Spaces of the Creditor and Debtor Side of the Accompt, do not exactly anſwer, particularly in* Folio 6th, *but the Name of the Accompt being written both on the Debtor and Creditor Side, prevents all Hazard of a Miſtake.*

It is necessary you correct the following ERRATA with your Pen before you begin to read.

PAGE 7. Line 5. for *this very* read *thus every*. l. 5. put the *Parentheſis* before *each*. p. 12. l. 29. *from by another Line* r. *from another, by a Line*. p. 25. l. 16. for 10 r. *ſo*. p. 26. l. 5. conne& *thus* with *Number*, and begin the next Sentence with *if the*. p. 34. l. 38. *Conſtitution* r. *Conſtruction*. p. 37. l. 23. *any other* r. *another*. p. 44. l. 1. for 19 r. 17. p. 48. l. 37, *Proportion* 5th r. *Propoſition* 4th. p. 49. l. 25. *add 5 and one* r. 5 *add* 1. p. 63. l. 17. cloſe the *Parentheſis* after *Queſtions*. p. 86. l. 40. for 110 *l.* r. 100 *l.* p. 99. l. 10, $\frac{3}{5}$ r. $\frac{4}{5}$. p. 111. l. 11 and 13. for $\frac{1}{100}$ r. $\frac{1}{1000}$. l. 14. for 200 r. 20. p. 115. *ſit* r. *ſit*. p. 118. l. 15. *applied* r. *applied*. p. 122. l. 29. *Congnation* r. *Conſignation*. p. 124. l. 4. after *Right* dele *of*. l. 23. *Eaſtte* r. *Eſtate*. p. 137 l. 43. *Rechange* r. *Recharge*. p. 169. l. 17. *the advance* : r. *they advance*, p. 174. l. 33. *woth* r. *doth*; and l. 35. dele *to*.

Appendix, p. 2, l. 10. for 6 r. 3, for $\frac{1}{2}$ r. $\frac{1}{3}$, l. 11, for 8 r. 16. p. 7. l. 18. *aleady* r. *already*. l. 43. for 21.6247696 r. 1.26247696. p. 12. l. 38. *Proportion* 3d r. *Propoſition* 3d. p. 23. l. 3. for $1\frac{3}{4}$ r. $1\frac{1}{4}$. p. 26. l. 28. for *C : S :: A : S* read *C : S :: A : ſ*.

There are other ſmall Eſcapes, particularly in the Pointing; but I'm confident there are none ſo great as will hinder you to know the true Senſe, and therefore I expect an eaſy Excuſe.

ARITHMETICK.

CHAPTER I.

Containing a Definition of Arithmetick, its OBJECT *and* OPERATIONS *in general; and particularly* NOTATION *or* NUMERATION.

§ I. *DEFINITIONS.*

1. WHEN we consider any Thing as One, or alone of its Kind; and then considering it as indivisible, or at least undivided; or *lastly*, considering several things as if they were really united, neglecting the Difference that may be among them; the *Idea* we have of this Thing or Collection of Things, considered after such a Manner, is called UNITY, *i. e.* one individual Thing of a particular Kind and Name; as one *Man*, one *Stone*, one *Army*, one *Kingdom*, &c.

2. WHEN we consider more things together, (which separately taken we would call *Unities* or individual Things, according to the first Definition) whether they are of the same or different Kinds; looking at no more in them but that they are not one and the same Thing or *Unit*; the *Idea* we have of them considered in this Manner is called NUMBER; thus we have a Number of *Men*, a Number of *Trees*, a Number of *Towns*, or *Armies*, &c. in which Examples, the Individuals are all of one Name: But if we should conceive together one *Horse*, one *Man*, and one *Tree*, they make as truly a Number of Things as the other, tho' they are different *Species* of Things.

3. The Science that contemplates the Nature and Properties of *Numbers* is called Arithmetick; the practical Part whereof is the applying these Properties of Numbers to things that occur in human Affairs.

From these Definitions clearly follow these Things, viz.

1. That Number is nothing else but a Collection or Multitude of Unities: Tho' Unity it self may improperly be called Number as far as it may answer the Question, *How many?* In which Sense even *Nothing* is a Number.

2. Numbers are indefinite; for they can be encreased as long as we can suppose another Unit added to the former Collection or Number.

3. The most general Property of Number consists in being capable of *Encrease* or *Decrease* by the continual adding or taking away *Unity*, until the Sum is *infinite* (if possible) or *Unity* remains; which if you also take away nothing remains. All other particular Properties, are only the Effect of comparing different Numbers.

I won't here engage very far in the Dispute, whether *Unity* be properly a Number, otherwise than as I have said above: If any Body is not pleased to distinguish *Unity* and *Number*, as I have done, I don't quarrel, let them consider Unity as the first and least Number: Only know, that I have always conceived Number, as implying a Multitude; and Unity as the most simple constituent Part thereof: And whenever Unity is called a Number, I take it to be so, only as it is an Answer to the general Question, *how many?* (*i. e.* what Number?) yet it is but improperly a Number; and if there are none or not more than one, I think the proper Answer is, *there is no Number, there is but one, or none:* But it were needless to give us this Trouble in ordinary Discourse: Before the Question is asked, it is supposed we know not what there is, whether one, or none, or many; and so as the Question is general, having an equal Respect to some or none; the Answer is always simply, *there is one, none, or so many*: As if the Question had been, *is there one*, or *more*, or *none?* Instead whereof we say more conveniently, *how many?* Comprehending all these Senses. Now, if the being an Answer to that Question, does not properly make *none*, a *Number*, it can as improperly make *Unity* so. A certain Author argues thus, *viz. If Unity is not a Number, then from any Number take away Unity, the same Number remains, which is absurd.* But this is precarious, and only follows from his own Definition of Unity, which he will have to be, a particular Number: It is plain, if according to him a great Number is composed of lesser Numbers, that if no Number is taken away, the same Number remains; but if we conceive every Number to be composed of Unities, then there is no such Consequence; for as the adding, so the taking away Unity, still changes the Number. To have done, take it any Way you will, so you have a clear Notion of the Object of Arithmetick: And for Conveniency I shall in all that follows consider Unity, as a particular, (tho' improper) Number.

4. It follows, that all the Operations in *Arithmetick* are reduceable to two, *viz.* Augmenting, and Diminishing.

§ II. *Notation, or the Expreſſion of Numbers.*

1. NUMBERS being indefinite, neither could the Theory of them be examined, nor that be made of any Uſe to Mankind, until a Way was found to expreſs them by certain Signs, whereby one Number might be repreſented diſtinctly from another: Theſe Signs are indeed all arbitrary, but neceſſary to be known and agreed upon by Perſons who would underſtand one another: They are of two Kinds. *1ſt*, Are certain articulate Words, as *One, Two, Three, &c.* different in different Languages. *2d*, Are certain Marks or Characters uſed in writing, and agreed upon at this Day by the greater Part of the known World, as 1, 2, 3, 4, *&c.* Both theſe Ways ought to be known; for as both of them repreſent the ſame Ideas in our Mind, ſo they are mutual Repreſentatives of one another; thus 3 ſignifies *Three*, and contrarily: But the laſt being the far ſhorteſt and moſt convenient Expreſſion, in order to all the Operations that are to be performed with Numbers; they are uſed to that Purpoſe (as certainly they have been contrived for it): Yet the other Way muſt be well underſtood, becauſe by it we ſpeak to one another about Numbers, and the Reſult of the Operations performed with the former; I ſhall therefore explain them both.

2. If we reflect, that Number is infinite or indefinite, then we ſee plainly that 'tis impoſſible to have different ſimple Expreſſions, for all the poſſible Variety; nor yet for a great Variety, without making the Practice of inſuperable Difficulty: But 'tis happily contrived, that we have but a few ſimple Names and Characters; and by the Combination of theſe, we can expreſs any other in the following Manner.

3. If we conſider Unity as a Number, then we conceive nothing as the Beginning of Number, or the Term from whence all Numbers commence, and we repreſent it in Arithmetick by this Sign o called a *Cypher*; to this join Unity or One, its Sign is 1; to this add another Unit, and you have the Number called *Two* and 2: Continue ſtill to join another Unit, and you have theſe Numbers that are the Reſult of that Encreaſe expreſſed both Ways thus, *viz. Three*, 3. *Four*, 4. *Five*, 5. *Six*, 6. *Seven*, 7. *Eight*, 8. *Nine*, 9. Theſe are all the ſimple Characters in Arithmetick, and being arbitrary Signs of our Ideas, there is no Reaſon to be demanded.

For the Expreſſion of all other Numbers by the Combination of theſe ſimple ones, I muſt explain both the Ways diſtinctly by themſelves.

4. For the Expreſſion of all Numbers above *Nine*, 9. by means of the former ſimple Characters (which are ordinarly called the Digits, becauſe there are as many of them as Fingers on one's Hands.) You muſt firſt know, that if *Unity* be added to *Nine*, the Sum is the Number Ten. And now by a very plain and eaſy Artifice, we can, by the Combination of the former ſimple Signs repreſent any poſſible Number, by this general Rule, *viz.* when any Number or Combination of Digits (whoſe Signification when they ſtand alone

we know already) are ſet down in a Rank between right and left Hand, that one in the firſt Place on the right Hand, is of the ſame Value as if it ſtood alone, that in the next or 2d Place to the left of the former, is ten Times as much as if it were in the firſt Place (for Example, inſtead of 3 or Three ſimply as in the 1ſt Place, it becomes ten times Three.) Again, that in the 3d Place is ten times as much as if it were in the 2d Place: And ſo on continually, the Value of every Place of the Rank being ten Times as great as the Place next it on the right Hand; and 0 in any Place is always nothing of it ſelf, yet ſerves to put the nine ſignificant Signs in their due Places, according to the Number to be expreſſed. This is the general Rule.

5. I ſhall in the next Place ſhow, how we proceed to expreſs all poſſible Numbers, as they encreaſe gradually above 9, by the continual adding of 1; and demonſtrate that the Rule is ſufficient and juſt; THUS, I have already called the firſt Number above Nine, *Ten*, which plainly by the general Rule is repreſented thus 10; and is the leaſt Number expreſſed by two Characters: If we ſubſtitute 1, 2, 3, 4, 5, 6, 7, 8, 9, ſucceſſively in the firſt Place (for the 0) we have the Expreſſions of all the Numbers that ariſe from the continual adding 1 to 9, *viz.* 11, 12, 13, 14, *&c.* to 19. After this 'tis plain we muſt put 2 in the 2d Place, and 0 in the 1ſt, and make it 20; for 10 Times 2 are evidently equal to 10 Times 1, (or 10) and 9 encreaſed by 1, (or 10) therefore 19 and 1 muſt be thus expreſſed 20; make the ſame Subſtitution for the 0, as in the former Caſe; and we have 21, 22, 23 *&c.* 29; to which one being added, it muſt by the former Demonſtration, be expreſſed 30. In the ſame manner proceed till you have put all the ſignificant Digits in the 2d Place, and with each of them combined all the Digits in the 1ſt Place; you'll arrive at the greateſt double Combination 99, to which, 1 being added, the the Sum is expreſſed 100: The Demonſtration is eaſy, for, 1 added to the 9 ſtanding in the 1ſt Place, makes it 10 (or ten Times 1) the 9 in the 2d Place, is 10 Times 9, expreſſed 90: Therefore both added together, make 10 Times 10, that is, by the Rule, the 1 muſt be removed to the 3d Place, and ſtand 100, which is the leaſt triple Combination, to which if we join ſucceſſively all the former Expreſſions from 1 to 99, we have the Numbers as they encreaſe continually by 1, expreſſed thus 101, 102, 103, *&c.* to 110, 111, 112, *&c.* to 199; after which, 1 added, plainly makes the Expreſſion 200; for 9 and 1 make 10; then 10 and 90, make 100, (by the laſt); *laſtly*, 100 and 100, make 200; after this, we have 201, 202, *&c.* to 299; then comes 300, and ſo on, till all the ſignificant Digits poſſeſs the 3d Place, and with each of them in that Place, be combined all the preceeding, till the greateſt triple Combination be 999. In the ſame manner, make theſe ſimple Characters ſtand in the 4th, 5th, 6th, *&c.* Places, and join to them all the preceeding Numbers from 1: And thus we may carry it to any Height, and expreſs any poſſibly Number, by the Combination of theſe few Characters.

FROM this Rule 'tis a plain Conſequence, that 0 can never be of any Uſe in the laſt Place on the left Hand; ſo that 046 and 46, is of the ſame Value.

6. I come in the next Place to ſpeak of the Expreſſion of Numbers in Words of our Language: And here I might proceed without any regard to the figural Expreſſions; as I did there without reſpecting this; but I find it eaſier and better to all Purpoſes to ſet before us the figural Repreſentations, and ſhow how theſe are expreſſed in Words, which take in the following RULE.

How the Digits are expreſſed we have ſeen already, and theſe are their Names when they ſtand in the 1ſt Place; if they ſtand in the 2d Place, they ſignify ſo many *Tens*, and are expreſſed by the Word *Ten* compounded with their ſimple Significations; thus, 20 is called *Twenty*, (or two *Tens.*) and 30 is called *Thirty*, (or three *Tens.*) 40, *Forty*. 50, *Fifty*. 60, *Sixty*. 70, *Seventy*. 80, *Eighty*. 90, *Ninty*. Again, all that ſtand in the third Place, ſignify or are called ſo many *Hundreds*, as 100, *One Hundred*. 200, *Two Hundred*. *&c.* Then for the next three Places, *viz.* 4th, 5th and 6th, the Figures in them have all the common Name of *Thouſands*, annexed to what they would ſignify, if they were in the firſt three Places: For Example, theſe 357, are to be read Three Hundred and Fifty Seven: But if thus 357000, (or whatever Figures are in the 1ſt three Places,) they are three hundred and fifty ſeven *Thouſand* (*i. e.* Three hundred thouſand, fifty thouſand, and ſeven Thouſand.) Again whatever ſtand in the next ſix Places, *viz.* the 7th, 8th, *&c.* to 12th, have the common Denomination of *Millions* joined to what they would ſignify in the firſt 6 Places, thus 246351, 000, 000, is to be read Two Hundred and Forty Six Thouſand, Three Hundred and Fifty one *Millions*. In the next 6 Places, they are *Millions* of *Millions*; and in 6 Places further, *Millions* of *Millions* of *Millions*, and ſo on; for every ſix Places combining, the Word *Million* once more, unleſs with ſome you chuſe the compounded Words *Billion*, *Trillion*, *&c.* for *Millions* of *Millions*, &c.

BUT the Truth is, we have no great Acquaintance in ordinary Affairs with Numbers above Millions; and tho' Mathematical Calculations have ſometimes deeper Numbers, yet there is not much Occaſion to expreſs them otherwiſe than in Characters.

7. WE ſee then how ſimply all Numbers are expreſſed in our Language; the firſt ten Numbers have different Names; of theſe all the reſt are compoſed to a *Hundred*; of the preceeding are all compoſed to a *Thouſand*; and of theſe again to a *Million*, beyond which we have no new ſimple Name, all are compoſed of the former. There is only to be noticed, that for the Numbers 11 *Eleven*, and 12 *Twelve*, the Compoſition of the Name is not ſo very clear.

AND now in Order to a more ready Rule, how to read any Number expreſſed by a Rank of Figures; I ſhall make this practical Reflection upon what has been above explained, *viz.* That every ſingle Digit has two Values; the one certain and known by its Form thus, 8 is *Eight*, which I would call its ſimple or *primitive Value*; the other unconſtant, depending upon the Place where it ſtands in a Rank with others, ſo 8 in the 2d Place, is 80 Eighty; and this I would call its *ſecondary Value*, or the Value of its Place; and to the right Reading of any Number, you muſt take Care to expreſs both its primitive and ſecondary Value; and ſo in this *Examp.* 46, the 4 I call not ſimply Four, but Four Tens by the compound

pound Name *Forty*. That we may have a ready Rule for the Value of every Place, take the following

TABLE of NUMERATION,

Where for Brevity, I mark the Word Ten with X, *Hundred thus* C, *Thousands thus* Th, *and Millions with* M.

M. of M.	C. Th. of M.	X. Th. of M.	Th. of M.	C. of M.	X. of M.	Millions	C. of Th.	X. of Th.	Thousands	Hundreds	Tens	Unites	
												1	One.
											1	2	Twelve.
										1	2	3	One hund. and twenty three.
									1,	2	3	4	1 Th. 2 C. and 34.
								1	2,	3	4	5	12 Th. 3 C. and 45.
							1	2	3,	4	5	6	123 Th. and 456.
						1,	2	3	4,	5	6	7	1 M. 234 Th. 567.
					1	2,	3	4	5,	6	7	8	12 M. 345 Th. 678.
				1	2	3,	4	5	6,	7	8	9	123 M. 456 Th. 789.
			1,	2	3	4,	5	6	7,	8	9	0	1,234 M. 567 Th. 890.
		1	2,	3	4	5,	6	7	8,	9	0	0	&c.
	1	2	3,	4	5	6,	7	8	9,	0	0	0	
1,	2	3	4,	5	6	7,	8	9	0,	0	0	0	
2,	3	4	5,	6	7	8,	9	0	0,	0	0	0	
3,	4	5	6,	7	8	9,	0	0	0,	0	0	0	
4,	5	6	7,	8	9	0,	0	0	0,	0	0	0	
5,	6	7	8,	9	0	0,	0	0	0,	0	0	0	
6,	7	8	9,	0	0	0,	0	0	0,	0	0	0	
7,	8	9	0,	0	0	0,	0	0	0,	0	0	0	
8,	9	0	0,	0	0	0,	0	0	0,	0	0	0	
9,	0	0	0,	0	0	0,	0	0	0,	0	0	0	
	cth.	xth.	th.	c.	x.	un.	c.	x.	un.	c.	x.	un.	
M of M.			Mill.				Thous.			Unities.			

THIS Table I have carried as far as Million of Millions, and have ordered it so, that you see all the Nine significant Figures standing in every Place; for the more Ease in Reading, I have agreeably to the former Explanations, not only marked the secondary Values of each Place at the Head; but also at the Foot

Foot I have marked them ſo, as to join together all the Places that have one common Name; where obſerve, tho' the firſt Three have all ſimple diſtinct Names, yet for Uniformity they are put together under the common Name of *Units* (which is indeed the general and common Name of the whole Rank, be it as long as poſſible; ſince 'tis only a Multitude of Units) and this very Rank is divided into *Periods*, beginning from the right Hand, making the two firſt Periods to conſiſt of three Places, each (diſtinguiſhed by a *Comma*,) which is alſo called a *ſingle Period*, (becauſe it has but three Places) every other following Period muſt (if the Rank be ſo long) take in ſix Places, and is therefore called a *double Period*, which it will be beſt to ſubdivide within it ſelf by a *Comma* ſet above, as here, 234'567,892,578, which is Two hundred thirty four thouſand, five hundred ſixty ſeven Millions, eight hundred ninety two thouſand, five hundred ſeventy and eight; and by this Means you'll eaſily read the greateſt Number, if you can but read any Number of three Places, for by this you can read any Number of ſix, and if the whole three or ſix are within one Period, firſt read them as there were no more in the Rank, and then join the Name of the Period; and having thus read each Period of the Rank, expreſs them altogether in Order from the higheſt, which is upon the left Hand.

8. KNOWING exactly how to read any Rank of Figures, it will be no Difficulty to write down in Figures any Number given in Words; and your beſt Way is, to begin with the loweſt Places, and ſet down what of the Expreſſion belongs to them, and ſo gradually to the higheſt; and in that Place for which nothing is expreſſed, ſet down 0, and now you ſee this requires your knowing readily the Order and Value of the Places, as in the preceeding Table; *Example*, Five hundred thirty and ſeven, is 537; Three thouſand two huudred and eight, is 3208.

I hope to be excuſed for inſiſting on the very Foundation of all the future Work, ſince I propoſe not only to direct your Practice, but alſo ſatisfie your Judgement.

§. III. *Concerning the Operations of Arithmetick.*

I Have already obſerved, That the Operations about Numbers, are of two general Kinds augmenting and diminiſhing; each of theſe are performed by two different Operations: which in Practice we call **Addition** and **Multiplication**, theſe for *Augmentation*; and we diminiſh by their Oppoſites, **Subtraction** and **Diviſion**; and theſe are the fundamental Operations of *Arithmetick*.

BEFORE I enter upon theſe, I muſt *obſerve*, That **Numeration** may be conſidered as the moſt ſimple Operation, whereby we encreaſe Numbers by the continual Addition of *Unity*; and by a continual retracting of *Unity*, we have the reverſe Operation; but we ſee plainly that *Numeration* ſuppoſeth in every one a Capacity of adding in their Mind *Unity* to *Unity*, or to any Number of *Unities*; Indeed as to the Artifice of Expreſſion, that is a Thing to be learned; but

ſup-

ſuppoſe you have the Idea of *five*-5, I can teach you to form the Idea of *ſix*-6, no otherwiſe than telling you to add the Idea 1 to 5: Now it being ſuppos'd you can do this, all I teach you is, how to expreſs that Idea by the word *Six* and by 6.

But there is a 2d Part which *Numeration* performs; for if two or more Numbers are propos'd, where no two ſingle Figures are of the ſame *ſecondary Value*; then we can add them together, and tell the Sum all at once, by barely ſetting them together in a Rank; thus, to add 400, 50 and 7, it's found without any Operation to be 457; or 3600 and 9, is 3609.

Now as all things unknown and difficult muſt be acquired by Means of Things already known and eaſy; ſo this of *Numeration* is the common Principle premiſed to all other Operations in *Arithmethick*: But you muſt know in the next place, that ſince the Operations of Arithmetick can be in the Nature of the Thing, no other than *Encreaſing* and *Decreaſing*; (the moſt general Property of Numbers being a Capacity towards this) therefore *Numeration* as it is the moſt ſimple Way of *Encreaſing*; ſo we ſhall find it contains all the other Ways in it; and the Reverſe of it will comprehend the other Ways of diminiſhing Numbers. As theſe Obſervations are worth knowing to one who wou'd underſtand Arithmetick, as well as practiſe it; ſo I ſhall apply them, in treating of the ſeveral Operations, to which I now proceed.

CHAP. II.

ADDITION.

§ I. *Definition.*

WHEREAS Numeration, as we have ſeen explained, teaches how to expreſs any Number from Unity, by the continual Addition of Unity to the laſt Number; or to expreſs the Sum of more and different Numbers, whereof no two ſingle Figures are of the ſame *ſecondary Value*; and that at one Stroke, *i. e.* in the moſt ſimple and eaſy Manner: Addition teaches how to find the Sum of any two or more Numbers whatever; doing that by Parts which could not be done all at once; ſo if the Sum of theſe Numbers 456 and 298 and 3642, is required, it imports no more than adding ſo many Unites together as are contained in the three Numbers; but it cannot be done at Sight: And by no Part of *Numeration* can it be done, unleſs we ſhou'd for Example take 3642, and to it join Unities one by one, till we have encreaſed it by 298 Unities, and that Sum again by 456, which wou'd do the Work at laſt,

laſt, and find the Sum to be 4296. But we ſee how immenſe this Labour wou'd be; and therefore as the *Rule* of *Addition* performs it ſpeedily and with Eaſe, we ſee that it is only a *compendious Numeration*.

§ II. *General Rule of Addition.*

1. SET down all the Numbers to be added as in the Example under written; wherein obſerve to ſet no Figures in the ſame Column, but what are of the ſame *ſecondary Value* (or Place.) Then 2. Beginning at the Place of Units of the lower Rank, add up all that Column; and under it (in the Sum) place the Total if leſs than 10, but if equal, or above, place the Exceſs above 10, or any Number of Tens; and if there's no Exceſs, write down 0; and for each ten add 1 to the next Column, which add up as you did the laſt; and go thus thro' every Place or Column; when you have ſumm'd up the laſt, ſet the Number of Tens found in it, upon the Left of all, as the higheſt Place, and you have the Sum required. See theſe Examples.

46782	2345
54629	6789
3456	9876
789	5432
123	1234
4056	5678
28	9760
109863 *Sum*	41114 *Sum*

I ſhall ſhow the *Rationale* of the Rule, after this *Obſervation*, *viz.* that it ſuppoſes not only that we can add 1 to any Number as in *Numeration*; but that we can readily add any of the Digits, to any other Number; and expreſs the Sum; which Capacity is to be got by Practice of adding Unity to any Number ſucceſſively, till we have added 9; for by this we can learn to know at once, what the Sum is when any Number from 1 to 9 is added. Now for

§ III. *The Reaſon of the Rule.*

1. NOTHING can ſtand in a Column but what are of the ſame Place; for otherwiſe, the Sum of them will be a Mixture of Units of different Values, and conſequently abſurd. For Example, to add 30 to 4, if you add the 4 to the 3, the Sum is 7, which is neither 7 Tens, nor 7 Units, and conſequently it is a Chimera: But add 4 to 0, and then add the 3 in its Place, the Total is 34, which is right; ſince it was propos'd to add 3 Tens and 4 Units. Argue the ſame Way in any other Caſe. 2. The ſecond Part of the Rule is manifeſt from the Nature of *Numeration*, according to which, every 10 of the Column or Place foregoing, makes but one of the Place and Column following. Now ſince all the Parts of every Thing together are equal to the whole, for they compoſe or make it up; it's plain, the Units of each Column,

i. e. of all the given Numbers being thus collected; the Aggregate or Sum, is the thing ſought.

HITHERTO I have only ſpoken of the *Addition* of pure and abſtract *Numbers*; I ſhall next very briefly explain,

§ IV. *The Application of Addition.*

WHEN Numbers come to be applied to the Things that occur in human Affairs, ſo that they ſignify, for Example, ſo many individual *Men*, *Horſe*, *Houſes*, *&c.* from the very common Senſe of Things, we draw this *Concluſion* or *Rule*, That theſe Numbers ought not to be added together, which do not ſignify the ſame Kind of Things; thus, let 4 be *Men*, and 5 be *Books*; the Sum of the Numbers is 9; but it's neither 9 *Men*, nor 9 *Books*.

BUT again *obſerve*, That for the Uſe of Societies it's found convenient to ſub-divide certain greater Quantities, into ſo many leſſer: As for Example, 1 *l.* Money is equal to 20 *s*; and 1 *s.* equal to 12 *pence*, and 1 *penny* equal to 4 *farthings*: Now, tho' the Unities of each of theſe Denominations, are not of the ſame Value, yet being but different *Species*, of the ſame general Kind of Thing, they can be added together in the manner following; tho' it's true the different *Species* cannot ſtand in one Column, for the former Reaſon. I ſhall henceforth call theſe mixt Numbers, where Numbers of two or more Denominations of the ſame Kind of Thing are found together; ſo I call 14 *l.* 18. *s.* one *mixt Number*; and to make a clear Diſtinction, we may call all theſe *ſimple Numbers* where we have but one Name, as 7 *Men*, or 16 *l.* And now I go on to give the *Rules* of *Application* in two Caſes.

CASE 1ſt, To add *ſimple Numbers*, *i. e.* which repreſent all one Kind of Things; as, *Men*, or *Houſes*, *&c.* make uſe of the preceeding general Rule: This needs no Example.

CASE, 2d, To add *mixt Numbers* of different Denominations of the ſame Kind of Thing. *Rule* 1ſt, you muſt conſider how many *Species* there are, and their Relations, *i. e.* how many *Units* of the leſſer, makes 1 of the next higher; ſet them down each *Species* together, and ſo as the leſſer be next the right Hand, and the next higher gradually upon the left: (ſee the following Example of Money.) And in ſetting down each *Species*, obſerve the preceeding general Rule. 2dly, The Number that you can ſet down under any leſſer Denomination, muſt be always leſs than the Value of an *Unit* of the next greater Denomination, otherwiſe you confound them: But the Reaſon will be plain from this laſt Part, *viz.* 3dly, Begin at the lower Denomination, and add up all the Numbers thereof, (which you cannot, by any general Rule, do Column by Column, but muſt take the whole Number and add to the next Number; but for this theſe Numbers are commonly ſmall) if the Sum is leſs than the Value of an *Unit* of the next higher Denomination, ſet it down under the Denomination added; if 'tis equal to, or more than 1, or any other Number of Units of the ſaid higher; ſet down the Exceſs, and for each 1 of the next higher you found, add 1 to the

Numbers

Numbers of the ſaid higher; the Reaſon of which is obvious. And when you come to the higher Denomination, do with it as in *Caſe* 1ſt; becauſe there's no higher to which it can be carried.

Example of Money

	20	12	4
Lib.	*ſh.*	*d.*	*f.*
467	14	10	3
268	06	11	2
349	19	06	1
978	12	08	3
24	04	00	2
2088	18	01	3 *Sum*

Example of Weight divided into

	16	16	16	4
Stone,	*pound,*	*ounce,*	*drap.*	*qr.*
76	14	12	10	2
243	09	13	04	3
986	15	14	12	0
4567	12	08	00	3
5892	00	06	15	2
11767	05	07	11	2 *Sum*

THUS we ſee, that it is the certain relation among theſe different Denominations which makes them capable of being added together; but ſtill 'tis true that the Numbers ſtanding in the ſame Column, muſt be every Way of the ſame Value and Name.

AFTER this Manner, knowing the ſeveral *Species* and *Relations*, (*i. e.* how many Units of each leſſer make one of the next greater) may any Example of *mixt Numbers* be written down, and added: But then to this *Rule* there is here a further Suppoſition, which alſo depends on Practice, *viz.* that you can readily add to any Number, the greateſt Number that can ſtand under any inferior Denomination of *mixt Numbers*.

OBSERVE 1. As to mixt Numbers; that tho' we may find Quantities of other Values or Names than you'll find in any practical Tables; ſo we have a *Guinea*, a *Crown*, *&c.* in Money; yet there are certain ſtandart Denominations to which all muſt be brought, in order to *Arithmetical Operations*, which for Money are theſe mentioned. I ſhall ſubjoin practical Tables of Things moſt uſeful, by which you may make Examples to your ſelf.

2. ANY Number of any Denomination of *mixt Numbers*, may be taken and added together, if the Sum is only required in the ſame Denomination, and then uſe the Rule of ſimple Numbers (for then they become ſimple) *i. e.* I may take any Number of *ſh.* as 45, and add to any other, as 72, the Sum is 117 *ſh.* or we may add every *Species* by the general Rule, and find the Sum of the ſeveral *Species* by themſelves, but this would not anſwer the Deſign of keeping all the *Species* diſtinct; and therefore is the 2d Caſe neceſſary.

3. IN all Rules of Addition, it is ſuppoſed that when we have ſumm'd any Column or Species, we know how to find how many Units of the next Column or Denomination it contains: And as to *ſimple Numbers*, where we regard the Number of *Tens*, this may well enough be ſuppoſed, becauſe the Words that expreſs Numbers, readily ſhow the Number of *Tens*; but for the inferior Denominations of *mixt Numbers*, it is very unreaſonably ſuppoſed, and

is will certainly, if the Sum is great, require *Diviſion* to find it out; and how can this be ſuppoſed, while a Scholar is advanced no further than *Addition*? To remedy this, I think, is eſſential to the practical Rule of Addition, which ought to be done thus, *viz.* having begun at the Foot of the Column, whenever you have got (by continual adding) a Number equal to, or greater than an Unit of the next Denomination (but leſs than two) make a Point at that Figure, and take the Exceſs above the foreſaid Unit, and add to the next Figure, till you have another Unit, then make another Point, and go on; when you have thus added the whole Column or Species, what Exceſs there is after the laſt Figure is added, ſet that down in the Sum; and it's plain every Point is an Unit to be carried to the next Denomination; and this Method is both rational and eaſy: For, if the Column is long, what a Burden muſt it be to any Body, even but to gather the Sum in his Mind: For this Reaſon alſo in ſimple Numbers, or the higheſt Denomination of *mixt*, it will be convenient to make a Point, at every 40, or 50, or 100, as you pleaſe, and then be ſure for every Point, to reckon accordingly 4, or 5, or 10.

§ III. *Proof of Addition.*

FOR the Proof (as they call it) of any Operation, 'tis very diſtinct from the Demonſtration of the Rule, and ſignifies only ſome counter Operation, which may give a Probability, that we have done the firſt Work right; but this new Operation muſt be an eaſier Kind than the one to be proven; and tho' it be, does it ſelf require a Proof, for there may be an Error in the one, as well as the other, and ſo ordered, that you'll think your Work proven, and yet both may be wrong; for if the one Error be an Exceſs, and the other an equal Defect, they balance, and make the Work ſeem right.

Now I know of no Proof, like going over it again deliberately; and in *Addition* you may try it by beginning at the Head of the Column, inſtead of the Foot, and count downward.

ANOTHER Way is to ſeparate one Part of the Numbers from by another Line (or a ſuppos'd one at leaſt) and adding theſe Parts into two diſtinct Sums (on another Paper) add theſe Sums; their Total ought to be equal to the Sum firſt found. The Reaſon is, becauſe the Parts of any thing are always equal to the whole.

BECAUSE I would mix practical Things into this Treatiſe as much as I can, not to exceed my Deſign too far, I ſhall add a few Queſtions.

QUEST. 1. A Man was 24 Years of Age, when his eldeſt Son was born; betwixt the Birth of this and a 2d, was 5 Years; from the Birth of the 2d to a 3d, was 12 Years, and the 3d is now 18 Years of Age, what is the Father's Age? Anſwer, 59 Years.

24	
5	
12	} Years
18	
—	
59	

QUEST.

QUEST. 2d, I bought a Parcel of Cloths, the first cost 35 *Lib.* I spent in bargaining 6 *Shill.* For packing them 4 *Shill.* For Carriage Home 1 *Lib.* 10 *Shill.* What do they stand me in all, when brought into my Ware House?

	L.	s.
	45	00
	00	06
	00	04
	01	10
Answer	47	00

QUEST. 3d, There is in one Chest 7 *Stone* of Suggar, in another 9 *Stone* 05 *Pound* in a third there is 13 *Pound*; What is in them all? *Answer*, 17 *Stone* 02 *Pound.*

	St.	Pd.
	7	00
	9	05
	0	13
	17	02

COMMON Sense will always direct when a Question is solvable by *Addition*, if you remember that the general Effect of it is the finding out the Sum or Total of several Particulars of the same Kind. And for further Assistance, I have added the following Tables, wherein I shew you the several *Species* and *Denominations* of Coins, Weights, Measures; but because all these Denominations in every Table are not necessary in *Arithmetick*, nor can they be all used in the same *mixt Number*, so I subjoin to each Table, another; which contains such *Species* as are convenient and proper for *Arithmetical Operation*, (in which *Species* every Quantity must be expressed, in Order to *Arithmetick*) and their several Relations I set over the Heads of the inferior Denominations; and where there are no other Denominations, than what are useful in *Arithmetick*; you have but one Table.

English

English Money.

4 Farthings	make	1 Penny,
4 Pence		1 Groat,
6 Pence		1 Teſter,
12 Pence		1 Shilling,
5 Shillings		1 Crown,
6 Sh. 8 Pence		1 Noble,
10 Shill.		1 Angel,
13 Sh. 4 Pence		1 Mark
20 Shill.		1 Pound.

20 12 4
Lib. Shill. Pen. Far.

Obſerve, *Scots* Money have the ſame Denominations, except *Farthings*; and *Engliſh* Money of the ſame Name, is 12 Times as much as *Scots*, *i. e.* 1 *Lib.* or 1 *Sh.* or 1 *Penny Engliſh*, is worth 12 *Lib.* or 12 *Shill.* or 12 *Pen. Scots.*

Apothecaries Weight.

12 8 3 20
Pd. Oun. Dram Scruple Gr.

Troy Weight.

12 20 24
Pound Ounce Penny Weight Grains.

Or write over your *Exa.* in ſhort, *P. Oz. P.W. Gr.*

This Weight is uſed for Gold, Silver and Bread.

Averdupoiſe Weight is the Greater.

20 4 28
Ton Hund. Weight Quarter Pound.

This Weight is for ſuch Things as are given out in great Quantities; but for ordinary Uſe you need not the *Ton*, and let the *Hundred Weight* be the greateſt; and you may mark them thus, Ct. Qr. Pd.

The Leſſer, which is only a Continuation of the Greater.

16 16 4
Pound Ounce Dram Quarter.

Or if you add a Stone, it will be

16 16 16 4
Stone Pound Ounce Dram Quarter.

Theſe Denominations are uſed where leſſer Quantities are given out.

Sheeps Wooll Weight.

7 Pound	is	1 Clove,
2 Cloves		1 Stone,
2 Stones		1 Tod,
6½ Tods		1 Wey,
2 Weys		1 Sack,
12 Sacks		1 Laſt.

12 26 14
Laſt Sack Stone Pound.

Liquid Meaſures, are, 1mo, Wine Meaſure.

4 Quarts			1 Gallon,
42 Gallons			1 Tierce,
1½ Tierces,	or 63 Gall.	make	1 Hogſhead,
2 Hogſheads			1 Pipe or Butt,
2 Pipes			1 Ton.

4 63 4
Ton Hogſhead Gallon Quart.

If you pleaſe to add *Pint* to this, it may properly be joined to it, and then 2 *Pints* is 1 *Quart.*

2do,

2do, Beer, or Ale Measure.

2 Pints	make	1 Quart,
2 Quarts		1 Pottle,
2 Pottles		1 Gallon,
9 Gallons		1 Firkine of Beer,
8 Gallons		1 Firk. of Ale, Herrings, Soap,
2 Firkines		1 Kilderkine,
2 Kilderkine		1 Barrel.

8 Ale, &c.
9 Beer.

Bar.	4 Firk.	Gall.	4 Qu.	2 Pint.

NOTE, What in *England* is called a *Pint*, is near the same Thing, as what in *Scotland* is called a *Mutchkin*, and you may add this Table of *Scots* Denominations.

Hogshead	16 Gallon	8 Pint	4 Mutchkin	4 Gill.

Dry Measure.

2 Pints	make	1 Quart,
2 Quarts		1 Pottle,
2 Pottles		1 Gallon,
2 Gallons		1 Peck,
4 Pecks		1 Bush. of Corn,
5 Pecks		1 Bush. of Water,
8 Bushels		1 Quarter,
4 Quart.		1 Chalder,
5 Quart.		1 Wey,
2 Weys		1 Last.

Chal.	4 Qu.	8 Bush.	4 Corn Peck	4 Pottle	4 Pints.

The Denominations used very commonly in *Scotland* are,

Chald.	16 Boll	4 Bush.	4 Peck	4 Quarter,

Long Measure.

3 Barley Corns	make	1 Inch,
12 Inches		1 Foot,
3 Foot, or 16 Nails		1 Yard,
45 Inches		1 Ell *English*,
2 Yards		1 Fathom,
5½ Yards		1 Pole or Perch,
40 Perches		1 Furlong,
8 Furlongs		1 English Mile.

Mile	8 Furl.	220 Yard	3 Feet	12 Inch.

For Cloth Measure.

Yard	4 Quarter	5 Nail.

Time.

60 Seconds	make	1 Minute,
60 Minutes		1 Hour,
24 Hours		1 Day,
7 Days		1 Week,
4 Weeks		1 Month,
13 Mon. 1 Day and 6 Hours		1 Year.

Year	13 Month	28 Day	24 Hour	60 Minute.

NOTE, In this Table, for Arithmetical Practice, the odd Day and 6 Hours, that with 13 Month make a Year, are neglected, nor can they be taken in, so that you'll always have so much over in that Year, as this Neglect amounts to; but when we come to the proper Place for calculating Interest, I shall shew you how to supply this Defect.

Square

Square Measure.

16 Quar. of an Inch squared	make	1 Inch squared,
144 square Inch.		1 Foot squared,
9 square Feet		1 square Yard,
30 Yards and ¼		1 square Pole,
40 Poles long, and 1 broad		1 Rod of Land,
4 square Rods		1 Acre,
640 square Acres		1 square Mile.

Acre 4 *Rods* 40 *Poles.*

NOTE, *Square Measure*, is that which is as broad as long.

Table of Dozen.

12	12	12
Gr. Groſs	*Sm. Groſs*	*Doz.*	*Sing. Pieces* (of any thing)

CHAP. III.

SUBSTRACTION.

§ I. *Definition.*

AS by the Reverſe of **Numeration**, we know how to diminiſh any Number by the continual retracting of 1; or by taking any Number from another, when any Figure of the leſſer is found in the greater, and in the ſame Places, as for Example, to take 64 from 864, we can expreſs the Number ſought or Difference at a Stroke thus 800.

So **Subſtraction** teaches to take any leſſer Number (which is called the **Subſtractor**) from any other greater (which is the **Subſtrahend**) ſo as to find out the Difference or Remainder—for Example, to take 46 from 598; now by a continual taking away Unity, till the whole 46 are taken from 598 the Difference could be found; but this Rule of *Subſtraction* does it with Brevity and Eaſe; ſo it is a *Compend* of the *Reverſe Numeration*; tho' we muſt ſay too, it does that by Parts, which cannot always be done at firſt Sight.

§ II.

§. II. *General Rule of Substraction.*

1*mo*, SET down the Numbers as directed in Addition, and set the greater upmost. 2*do*, Begin at the *Units* Place of the *Substractor*, and take the Difference of it, and the Figure that stands in the same Place of the *Substrahend*, which set down in the Remainder, do so with each Place to the left Hand: But if the Figure in any Place of the *Substractor*, be greater than its Correspondent in the *Substrahend* (the Total always being less) then add 10 to the Deficient and Substract; and when you come to the next Place add 1 to the Substractor, and take the Sum from the correspondent *Substrahend*; or take the *Substracter* Figure from the *Substrahend* Figure lessen'd by 1; and do this as often as you need to add 10: All these Differences set down thus, make the total Difference sought.

Example		*Example*	
Substrahend	7845	Substrahend	97243
Substractor	2314	Substracter	5627
Remainder or Difference	5531	Difference	91616

It is to be observed, that this Rule supposes, we know to substract any Digit, from any other greater Digit, or from the Sum of any lesser Digit encreased by 10, which we may learn by Practice of retracting 1 continually from any Digit, or from the Sum of any Digit and Ten.

§. III. *Reason of the Rule.*

THE first Part has the same Reason as in *Addition*; for the second Part it's plain where the *Subtractor* Figure is least; but where it's greatest, the Reason of adding 10, *&c.* will be plainly this: Let it be demanded to take 27 from 43; this certainly can be done, tho' 7 cannot be taken from 3, therefore I add 10 to the 3, *i. e.* I take 1 from the 4, (which is 10 from 40 in this Case) so that my *Substrahend* is as if it were 30 and 13, therefore when I take 7 from 13, and mark the Remainder 6, I am next to take 2, (*i. e.* 20) from 3, (or 30, *i. e.* 40 less by 10, which was already taken from it) and the Remainder in the Place of 10's is 1, and the whole Difference is 16, which is certainly the true Difference of 43 and 27, since 43 is equal to 30 and 13, from which the 27 is taken; but if instead of taking 1 from 4 in the *Substrahend*, you add 1 to 2 in the *Substracter*, the Effect is still the same, since either Way there is 1 more than the 2, taken from the 4; and as oft as you thus add 10, the Reason is the same from this *Demonstration*, and the Nature of *Numeration*,

tion, by which every Place is 10 Times the Value of the laſt; or the laſt Way of adding the 1, will admit this particular Demonſtration, *viz.* if to any two Numbers you add equal Numbers (as the 10 to the *Subſtrahend* and 1, in the next Place equal to the former 10, to the *Subſtracter*) their Difference muſt ſtill be the ſame, ſince the Numbers added to each have no Difference; but the firſt Reaſon opens the Thing better: Now the whole being equal to all its Parts, the Parts of the *Subſtracter* thus taken ſucceſſively from theſe of the *Subſtrahend*, all theſe Differences muſt make the Difference ſought.

§ IV. *For the Application of Subſtraction.*

IT is the ſame Way made as *Addition*, remembring that when the Numbers are mixt, if the lower Denomination of the *Subſtracter* is greater than its Correſpondent in the *Subſtrahend*, you add to the Deficient as many as makes an Unit of the next Denomination; and for that either add 1 to the next Place of the *Subſtracter*, or take 1 from the *Subſtrahend* for the ſame Reaſon as before: And obſerve that you have here a further Suppoſition before the Rule can be uſed, *viz.* That you can ſubſtract any Number that can ſtand under any Denomination of *mixt Numbers*, from any leſſer Number that can ſtand there encreaſed by the Value of an Unit of the next above; which may be acquir'd by Practice. It's true theſe particular Parts of the Work may be done upon the Suppoſition of the General Rule by doing them apart; but this would be very uneaſie, and Practice will bring us to the Capacity ſuppoſed for performing the Work readily, according to the particular Rule.

NOTE, If it's propoſed to ſubſtract one Number from many, or many from one or from many, theſe many muſt be all firſt added, and then call their Sums the *Subſtracter* and *Subſtrahend*, according to the Propoſition.

Example

Lib.	*ſh.*	*d.*	*f.*	
872	14	09	2	Subtrahend
49	18	10	3	Subſtracter
822	15	10	3	Difference.

	Stone	*p.*	*ou.*	*dr.*	*qr.*	
Bought —	756	12	14	06	2	of Suggar.
Sold ——	140	10	07	00	0	
Sold ——	264	00	15	14	3	
Total ſold	404	11	06	14	3	Subtr.
Remains —	352	01	07	07	3	

§ V. THE Proof of *Subſtraction* is made by adding the Difference to the *Subſtracter*, the Sum ought to be equal to the *Subſtrahend*; this is plain, ſince the Difference is the Defect, or what the *Subſtracter* wants of the Subſtrahend, and therefore when added to it, muſt make it (*i. e.* the Sum) equal to the *Subſtrahend*.

§. VI.

§ VI. *Practical Questions solved by Substraction.*

Quest. 1. SUPPOSE from *London* to *Edinburgh* (going by *Newcastle*) be 300 Miles; from *Edinburgh* to *Newcastle* 80 Miles, how far is *Newcastle* from *London*? *Answer*, 220 Miles by Substraction of 80 from 300.

Quest. 2d, I borrowed 24 *Lib.* and paid thereof 16 *Lib.* 18 *sh.* what remains due? *Answ.* 7 *Lib.* 02 *sh.* by Substraction of 16 *Lib.* 18 *sh.* from 24 *Lib.*

Quest. 3d, What Weight added to 14 Pound *Troy*, will make a Sum equal to 18 *lib.* and 7 *Ounces*? *Answ.* 4 *Pound*, 07 *Ounce*, by Substraction of 14 *Pound*, from 18 *Pound*, 7 *Ounce*. For in the Sense of Things this Question is the same, as, What is the Difference of 14 *Pound*, and 18 *Pound* 7 *Ounce*?

SUBSTRACTION imports always the finding the Difference of two Numbers of the same Kind of Thing; or, which is all to one Purpose, to find what the one exceeds, or comes short of the other; and when the Sense of any Question demands this, then Use Substraction: But for a further Assistance, you may consider the Operations of the Questions following, where there is both *Addition* and *Substraction* required to find the Answer, as is plainly necessary when one Number is to be substracted from many, or many from one or many.

QUEST. 4th, I lent my Friend 40 *Lib.* whereof he paid at one Time 15 *Lib.* 18 *Shill.* at another 20 *Lib.* What is he due? *Answer*, 4 *Lib.* 2 *Shil.*

Quest. 4th.	*L.*	*sh.*
Lent	40	00
Paid at several Times.	15	18
	20	00
Total paid	35	18
Remains due	04	02

QUEST. 5th, I bought and received at one Time 14 *Pound* of Suggar, at another Time 8 *Pound* 10 *Ounce*, at another 6 *Pound* 8 *Ounce* 14 *Dram*; out of the whole was given 12 *Ponnd.* What remains in my Hands? *Answer*, 17 *Pound* 6 *Ounce* 14 *Dram.*

Quest. 5th.	*Pd.*	*Oz.*	*Dr.*
	14	00	00
	08	10	00
	06	08	14
Received	29	06	14
Disposed	12	00	00
Remains	17	06	14

QUEST. 6th, There are 2 Barrel of Figs; the groſs Weight of one is 17 *Stone* and 9 *Pound* of the other is 10 *Stone* 7 *Pound* 13 *Drap*. The Weight of one empty Barrel is, 1 *Stone* 3 *Pound* of the other 13 *Pound* 9 *Drap*; What is the neat Weight without the Barrels? *Anſwer*, 26 *Stone* 00 12 *Ounce* 7 *Drap*.

Queſt. 6th.

	St.	*pd.*	*oz.*	*dr.*
	17	09	00	00
	10	07	13	00
Total Groſs	28	00	13	00
	01	03	00	00
	00	13	00	09
Weight of Barrels	02	00	00	09
Neat Weight	26	00	12	07

CHAP. IV.

MULTIPLICATION.

§ I. *Definition.*

MULTIPLICATION teacheth to take any Number propos'd (which we may call the Multiplicand) as oft as there are *Units* in another (called the Multiplier) that is, a certain Number of Times; and find the Sum (called the Product) which Addition will perform by ſetting down the Number to be multiplied, ſo many Times as is propos'd, and then adding them all up; thus—

7
7
7
—
21
—

to know what 3 Times 7 amounts to, I muſt write down 7 thrice, and the Sum is 21; but as this Method is very tedious, the *Rule* of Multiplication does it both ſhorter, and eaſy; Hence it is only a compendious Addition.

NOTA, When one Number is multiplied by another, and that Product by another, and the laſt Product by another, and ſo on, this is called continual Multiplication.

§ II.

§ II. THE following Rule of *Multiplication* supposes we know how to multiply any simple Digit by another; which we learn by a Practice of adding any *Digit* to it self, and then to the last Sum, till we have taken the same once, twice, *&c.* and by much Use we may learn to do more difficult Multiplications at Sight: But the Multiplication of the simple Digits, being only suppos'd to the following *Rule*; it's necessary for Assistance of Learners to give a Table of all these Products, which if any Body wou'd have a Reason or an Assurance for, they must be at Pains to calculate every Case in the Manner mentioned above, and explained below.

TABLE *of* MULTIPLICATION.

1	2	3	4	5	6	7	8	9
2	4	6	8	10	12	14	16	18
3	6	9	12	15	18	21	24	27
4	8	12	16	20	24	28	32	36
5	10	15	20	25	30	35	40	45
6	12	18	24	30	36	42	48	54
7	14	21	28	35	42	49	56	63
8	16	24	32	40	48	56	64	72
9	18	27	36	45	54	63	72	81

THE *Construction*, or making of this *Table* is thus, *viz.* Having set down the nine *Digits* on the Head Column; under each we fill up the same *Digit* taken twice, thrice, *&c.* to 9 Times; by a simple Addition of the same *Digit*, first to it self, and then to each following Sum; for *Example*, the Column under 6, is thus made, 6 and 6 is 12, and 6 makes 18, *&c.* which agrees exactly to the Definition of Multiplication; and therefore I may rather say, There is nothing suppos'd to *Multiplication*, but some very simple Additions; because by that, this Table is constructed; which makes the more difficult *Multiplications* easy.

THE

THE *Use* of the *Table*—seek the Multiplicand in the Head Column, and the other in the Left-side Column; you'll find the Product in the Meeting of the two Columns that proceed downwards and to the Right Hand, from the two given *Digits*; thus 6 by 4 produces 24.—The Reason that the true Product is thus found, is clear from the Construction of the Table.

UPON the former Table, *observe* that as the outter Left-side Column is the same with the Head Column, (*viz.* a Column of simple *Digits* gradually from 1 to 9) and cou'd not be otherwise from the Construction; so the Columns proceeding from the same *Digit* on the Head and Side, the one downwards, the other to the Right Hand, are always the same, and cannot be otherwise, according to the Construction of the Table; as will be plain from any one *Example*; take 8 both on the Head and Side, find their Product 64; it's evident the Columns proceeding from 64 both Ways to 8, ought to be the same; for from the Construction, the Numbers upward to 8 decrease continually by a Difference of 8, (because they were made so as to encrease by 8 downwards) but they ought to decrease to the Left by the same Difference; for next to 64 on the Left we find 56, the Product of 7 by 8 (by the Construction) but 7 wants 1 of 8, therefore 8 Times 7 must want 8 Times 1, *i. e.* 8 of 64, or 8 Times 8; for the same Reason 8 Times 6 wants 8 of 8 Times 7, and so of all the rest gradually, till we come to 8 on the Side: Therefore the Construction of the Table from the Side, is the same as from the Head.

CONSEQUENCE from this, it's plain, that of two given *Digits*, either may be taken for *Multiplicand* or *Multiplier*, *i. e.* for *Example*, 6 Times 7, is the same as 7 Times 6; for since the Numbers proceed the same Way from the Side as from the Head; therefore let the *Multiplier*, which before was found on the Side, be suppos'd to be the *Multiplicand*; it's certain you must find the same true Product under the Figure of the Head, which was before *Multiplicand*, and is now *Multiplier*; because the Construction from the Side is the same as was supposed from the Head; and therefore when two *Digits* are proposed, we may take any of them either on the Head or Side.

IF we again suppose this Table continued infinitely, by a continual Addition of 1 from 9 along the Head, and filled up downwards, also infinitely; this Table would contain all possible Numbers; and from the Construction we may conclude *universally*, That of any two *Numbers* proposed, the Product will always be the same, which ever of them is made *Multiplicand* or *Multiplier*, that is, 462 Times 58, is the same as 58 Times 462, *&c.*

BUT this is yet more sensibly shown, in this simple and easy Manner, *viz.* Suppose any Number of Things (as 6) represented by the uppermost Row of Points in the following Example.

Example

6
. . . . . .
. . . . . .
. . . . . .
4 . . . . . .
. . . . . .

LET it be proposed to multiply that Number, by any other as 4; it's plain, when the given Row (6) is written down 4 Times, we have the Sum or Product sought contained in all the Points set down; but it's visible we shall thus always have a Row of Points, standing downwards from each Point of the given Row, equal to the given *Multiplier*; and

and because there is always one such Row for every Point of the *Multiplicand*; it's therefore certain, that if we change the *Multiplier* into *Multiplicand*, and contrarily; we shall still have the same Number of Points, *i. e.* the same Product.

If three or more Numbers are proposed, to be continually multiplied into one another, it is the same Thing in what Order you take them; the Product will always be the same; I shall take the Advantage of being easily credited for this Truth, because tho' I could make a positive Demonstration of it, yet it would be too tedious, and Experience will satisfie you about it.

Now with the Knowledge of the foresaid Table, we shall proceed to the General Rule of Multiplication, which performs a Work by few and easy Parts, that cannot be done at Sight, and would be intollerable to do by *Addition*.

§ II. *General Rule of Multiplication.*

1*mo*, SET the *Multiplier* under the *Multiplicand* (no Matter in what Order) begin with the Figure in the Units Place of the *Multiplier*; and by it multiply, One by One, the Figures of the *Multiplicand* (as if they were all in the first Place) from the Right to the Left; and in every single *Multiplication* set down (in a Rank from Right to left Hand) what's less than 10, or above any Number of 10's, and for every 10 carry 1, and add to the Product made of the next Figure of the *Multiplicand*, and so on till you have multiplied them all; and what's carried at the last Figure, set down on the left Hand of all; and this Rank is the particular Product arising from the *Multiplication* of the *Multiplicand* by that Figure of the *Multiplier*. 2*do*, Do the same with every other Figure of the *Multiplier*, in Order from the Place of *Units*; but observe, that the first Figure of every following particular Product be set down under the 2d Figure of the last particular Product, so will all the Figures of these particular Products stand in distinct Columns; which, 3*tio*, Being added up by the Rule of *Addition*, the Sum is the *Product sought*.

Example

7642983 Multiplicand.
7 Multiplier.

53500881

Example

4683257 Multiplicand.
345 Multiplier.

23416285
18733028
14049771

1615723665 Product sought.

§ IV.

§ IV. *Reaſon of the Rule of Multiplication.*

IN order to ſhow the *Reaſon* of the *Rule*, this muſt be premiſed, *viz.* if any given Number be multiplied by any other, the Product ſought ſhall be equal to the Sum of all the Products raiſed by multiplying that given Number, ſeparately and diſtinctly into all the Numbers (taken at Pleaſure) whoſe Sum makes up the given *Multiplier*.

THIS is perfectly demonſtrated by conſidering, that the Parts are equal to the Whole; and therefore to multiply by all the Parts, is multiplying by the Whole: But to leave no Doubt, I ſhall illuſtrate it by an Example.

EXAMP. let it be propos'd to multiply 6428 by 579, that is, by the *Definition* of *Multiplication*, we muſt take 6428, 579 Times, and find the Sum: Now it is plain, 579 is equal to 500, 70 and 9 (by *Numeration*;) if the Product ſought were to be found by Addition, it's certain, that having ſet down 6428, 500 Times, and again 70 Times, and laſtly 9 Times, all theſe being ſumm'd up ſeparately, the Sums among them contain the Number required; for the given Number 6428, has been written down as oft as was propos'd, and all added; therefore the Aggregate of theſe particular Sums, is the Sum ſought; for the Parts are ever equal to the whole: Hence the Thing propoſed is a clear Truth, for to multiply 6428 by 500, by 70, and by 9, is to add it ſo many Times, and find the Sum.

NOW the *Demonſtration* of the *Rule* of *Multiplication* follows eaſily, the 1ſt Part of the Rule for multiplying with the Unit Place of the *Multiplier*, is plain, for we take the Figure of every Place of the *Multiplicand*, as oft as that *Multiplier* requires, and ſet down each Product in their Places, by means of carrying forwards 1 for every 10 (according to the Value of the Places) and therefore that Rank is the true Product of all the Parts of the *Multiplicand* by that Figure of the *Multiplier*: Again for the 2d Part, we perform the ſame with every Figure of the given *Multiplier*, as if it were ſimply *Units*: But becauſe it is not ſo, we ſet the firſt Figure of the particular Product in the ſame Place, that the muliplying Figure ſtands in, *i. e.* we advance it ſtill in order, one Place more to the left Hand, as the Figure of the *Multiplier* is; by which Means, that firſt Figure, (and conſequently all the reſt of the Rank, *i. e.* that whole Product) ſtands in its due Place; for certainly, any *Digit* in the Place of 10's, makes a Product ten Times greater than if it were but *Units*; and ſo gradually in every other Place; but by advancing the whole Product one Place more to the left Hand, you alſo encreaſe its Value ten Times: Therefore all theſe particular Products, are truly found and ſet down; whoſe Sum *3tio.* is the total Product ſought, as is clear from the Thing premiſed and demonſtrated.

EXAMPLE for Illuſtration, to multiply 2469 by 345, *i. e.* by 300, by 40, and by 5.

Operation

OPERATION by PARTS.				OPERATION.
2469	2469	2469		2469
300	40	5		345
740700	98760	12345	First Product,	12345
		98760	Second Product,	9876
		740700	Third Product,	7407
		851805	Total Product sought.	851805 Product.

For the more ready Practice.

Observe 1. When any given *Multiplier* ends with *Cyphers* on the right Hand, there's no Need to make Ranges of o's; but first multiply with the significant Figures, and to the Product annex all these Cyphers on the right Hand, which will put the Product in the true Place; as is plain when an Example is compared with the general Rule. But 'tis capable of this particular Demonstration, *viz.* that for every such o in the Multiplier, which you neglect in the Operation, the Product is 10 Times less than just, because by this Neglect the Multiplier is 10, *i. e.* for one o, 10 Times, for oo, 100 Times, for ooo, 1000 Times too little; consequently the annexing so many o's to the Product, restores the true Value.

Examp.
2469
3200
4938
7407
7900800

If both *Multiplicand* and *Multiplier*, end with o's neglect them all in the Operation, and annex them to the Product; the Demonstration is the same; for the o's of the Multiplicand annexed, restore the Defect arising from that Neglect; and the o's of the Multiplier annexed, restore the Defect of that Neglect, in the Operation. Here the Product 10856 would be 100 Times too little, because the Multiplicand is not 472, but 47200, *i. e.* 100 Times 472; but these two neglected o's annexed to the Product, correct that Defect. Again, 1085600 would be 10 Times too little, because the Multiplier is not 23, but 230, *i. e.* 10 Times 23, but this neglected o annexed, corrects that Defect, so that the true Product is 10856000.

Examp.
47200
230
1416
944
10856000

Consequence, the Product will still be the same, whatever Way we conceive these o's to be distributed betwixt the Multiplicand and Multiplier; so that for Example, 400 by 5, is the same as 4 by 500, or 40 by 50.

Exa.
463
25
2315
926
11575

25
463
75
150
100
11575

Obs. 2. When two Numbers are propos'd to be multiplied, it will be always most convenient, to set that which has fewest Places below, and make it the Multiplier; for thus we shall have fewest partial Products, and consequently neater Work; for the total Product will be still the same, as has been shown at the Beginning.

Consequence from what has been hitherto demonstrated, we have gain'd this Rule for convenient Practice, *viz.* that if one or both Numbers given to be multiplied end with Cyphers, 'tis best to set that one below, which has fewest significant Figures, tho' it be a greater Number: Thus, if the Multiplier have Cyphers in any other Places, when you come to multiply by that Place, you may pass it and advance the first Figure of the next Product, two Places; if there are two Cyphers together, advance that Product 3 Places, *&c.* and what the last Consequence taught, will hold in this Circumstance, as you may see in this Example.

Example.

462400
350000
23120
13872
161840000000

Example.

4650000
3004000
1860
1395
13968600000000

§ V. *The Proof of Multiplication.*

Multiplication and Division prove each other mutually, as I shall show at *Division*: But there are other Ways of trying *Multiplication*, of which the Method of casting out the *Nines*, is one much used, and is thus, *viz.* take all the *Figures* of the *Multiplicand*, as if they were a Rank in the Place of *Units*, and in this View sum them up, as if you were to carry 1 for every 9, to some other *Denomination*; what's over (or below) 9, when you come to the last *Figure* set down, (but neglect the 9's) do the same with the *Multiplier*, and then multiply these two *Figures*, thus set down, into one another, and from their *Product* cast out the 9's the same Way, and mark what's odd of 9 here; then cast the 9's out of the *Product* (of the Example) and the Odds of 9 here, must be equal to that of the last mentioned *Product*.

Example.

74653
78
597224
522571
5822934

Excess of 9's in the *Multiplicand* is 7, in the *Multiplier* is 6, their *Product* 42, in which the Odds of 9 is 6, equal to the Excess of 9 in the *Product* sought, as you'll find by Trial.

Now before I demonstrate this Way of proving *Multiplication*, I must observe, that many have found Fault with it: I wish they had done a little more, than barely to complain; for at most they have told us, that a wrong Operation may appear right by it, as is plain enough, if you'll but suppose in the last *Example*, that by an erroneous *Operation*, the *Product* comes to be 5282934, where you see there is nothing but a bare misplacing the 8 and 2; and

2; and consequently there will still be the same Odds of 9's, tho' it might be also by a false Figure: But this Proof does not deserve so much to be slighted, for it may fall out with every Kind of Proof, that a wrong Operation may appear right, by an equal opposite Error in the Proof-work; so that we have no Proofs: Indeed I own there is this considerable Difference, that here (only) suppose the Proof is right, yet we may have a wrong Operation appear right; tho' a true Operation can never appear wrong, by this Proof-work, if right perform'd: But I reckon 'tis a great Chance, if the Error be so circumstanced, as that the Proof shall hold. After all, I believe to go over the Work leisurely in every Kind of Operation, will give the Mind greater Ease; yet as I would deliver nothing without Reason, and because that the Demonstration of this *Method*, may give some Insight into the *Nature* of *Numbers*, I shall produce it as plain and short, as I can, to be intelligible.

Reason of the Proof by casting out 9's.

1. I shall demonstrate this *Proposition*, *viz.* In any Number expressed according to the Progression of the *Table of Numeration* preceeding; if you consider any Figure of the Rank as simple *Units*, they will be the Excess of 9's contain'd in the Value of that *Figure* in that Place: For *Example*, in 500, I say when all the 9's that are contain'd in it are cast out, the *Excess* is 5; which is thus clear, If 5 be in the 1st Place, then it's below 9; if in the 2d Place, it is 50, *i. e.* (by *Numeration*) 10 times 5, or 5 times 10, (by what has been shown at *Observation 2d preceeding*) but 10 is equal to 9, and 1; therefore by the Demonstration of the *Rule of Multiplication*, 50 is equal to 5 times 9, and 5 times 1, (*i. e.* 5) therefore the *Proposition* is true in this Case. If 5 is in the 3d Place, as 500, this is 10 times the last Value, *i. e.* 10 times 50, equal to 50 times 9, and 50 times 1, or 50; but the *Excess* of 9's in 50 is 5, by the last; and therefore, *&c.* And generally advance it still one Place more, the Value is 10 times the last; wherefore 'tis plain it will resolve into a certain Number of 9's and 50, for it will always be 10 times the last Value, *i. e.* 9 times the last Value, more 1 time the last Value. But the *Proposition* is true in the last Place; and 9 times that, is a precise *Number* of 9's, (from the *Nature of Multiplication*) and has no *Excess*. The Reasoning is the same, if you suppose any of the *Digits*; for the Demonstration depends not on the *Figure*, but on the *Nature of Numeration*. Hence we have this plain Consequence, that the *Figures* of all the Places of any *Number*, may be look'd upon as a *Column of Units*, expressing the *Excess* after all the 9's are thrown out of the several Values of each Place of the Rank; and to this again 'tis an evident Consequence, that when these *Units* are summ'd up, and the 9's thrown out in the summing, this *Excess* is the *Excess* after all the 9's are cast out of the whole *Number given*. Which is one Part of the *Rule* proven.

2. If the *Multiplicand* and *Multiplier* are simple *Units* below 9, the *Rule* must hold, because the *Product* sought is the same with the *Product* made by the Odds of 9's found in both *Multiplicand* and *Multiplier*. If the *Multiplicand* or *Multiplier*, or both, are 9, or a certain Number of 9's, then it must hold,

becauſe the *Product* ſought muſt be a certain *Number* of 9's, and the *Exceſs* will be 0: For the *Exceſs* in *Multiplicand* or *Multiplier*, or both, being 0, the *Product* of theſe *Exceſſes* will be 0, and ſo the *Rule* will hold. Now, there is not another Caſe but one, *viz.* when neither *Multiplicand* nor *Multiplier* are 9, or a preciſe Number of 9's, and that the *Rule* muſt hold in this Caſe, I thus demonſtrate, *viz.* If the *Multiplicand* and *Multiplier*, are neither of them 9, nor a Number of 9's, they muſt both be compos'd of a Number of 9's and ſome *Exceſs*; or one of them be ſo, and the other below 9, (for where both are leſs than 9, has been conſidered) now in *Multiplication*, all the Parts of the one Number are multiplied into all the Parts of the other; and the Sum of theſe *Products* is the *Product* ſought; (as has been ſhown) but the *Products* of theſe *Parts* that are equal to 9, or a Number of 9's, or one of them ſo, and another below 9, is alſo a Number of 9's wherein the *Rule* holds, as we obſerv'd already; and for the remaining Parts leſs than 9, the *Rule* alſo holds with Reſpect to their *Products*; and if it hold in every *partial Product* of the *Parts*, into which the *Multiplicand* and *Multiplier* are thus reſolved; it muſt hold in the *whole Product*, which is but the Sum of the former. For Illuſtration, if 23 be multiplied by 16, the *Product* is 368; but 23 is compos'd of 18 (*i. e.* two 9's) and 5, and 16 compos'd of 9 and 7, the total *Product* is equal to theſe 4 *Products*, *viz.* of 18 by 9, and 18 by 7; 5 by 9, and 5 by 7. But the firſt 3 *Products* are a certain Number of 9's, where the *Rule* muſt hold, as it muſt alſo in the laſt, where both are leſs than 9; and conſequently it cannot fail in the Sum of them: Or you may prove *Multiplication* by doing the Work again with the *Multiplicand* and *Multiplier* changed.

§ VI. *Multiplication applied.*

I Muſt in the Entry to this obſerve 1*mo*, That 'tis a plain Conſequence to the *Definition* (or *Nature*) of *Multiplication*, that one of the *given Numbers* muſt always be *pure* and *abſolute Number*, and can ſignify nothing; ſince *Multiplication* imports only the taking any Number (of whatever Things) a certain Number of Times; ſo that plainly there can be no Denomination here, but that of the Things to be multiplied, which is neceſſarily the *Denomination* of the *Product*. But then 2*do*, From what has been already ſhown, it remains ſtill no matter, which of the two *Numbers* be ſet below as *Multiplier*; ſince, for Example, 3 times 7 *l.* will always be the ſame as 7 times 3 *l.* or ſince the Senſe of every Queſtion will diſtinguiſh a *Multiplicand* and *Multiplier*; according as theſe Terms are defined, you may ſet either of them below without changing the *Denomination*; and ſo multiply 74 *l.* by 462, it may ſtand thus.

462
74 *l.*

Hence again 3*tio*, It follows, that all ſuch Queſtions which ſimply propoſe to multiply two *Numbers* both affected with *Denominations*, whether ſimple or mixt, of the ſame or different Names, are abſurd, and not *arithmetically* propos'd; ſuch as to multiply 6 *l.* by 4 *l.* or 8 *l.* by 3 *Yards*, or 3 *l.* 4 *s.* by 4 *l.* and 9 *d.* And to make ſuch *Propoſitions* have any Senſe, they

ought

ought to be thus qualified, *viz.* the *Question* must be to take any one of the *given Numbers*, as oft as the other contains an *Unit*, (or any other Number) of a *given Denomination*: For *Example*, It may be propos'd to take 4 *l.* 10 *s.* as oft as 3 *l.* 4 *s.* contains 1 *l.* or 1 *s.* or 1 *d.* or as oft as 14 *Stone Weight* contains 1 *Ounce* or 1 *Pound*, *&c.* then indeed we have a *rational Proposition*; but it is plain the *Question* is changed, and is no longer a *simple Question* of *Multiplication*; for to solve this Question, we must find how many such *Units* the *given Multiplier* contains; and by that Number, (which is truly absolute, signifying only how oft the said *Unit* is so contain'd) we must multiply the *given Multiplicand*, and the *Product* is of the same Denomination: *Example*, to multiply 56 *l.* by 4 *Days*, if the Sense be, to take 56 *l.* as oft as 4 *Days* has *Days*, the Product is 4 times 56 *l.* or 224 *l.* but if it were propos'd, as oft as 4 *Days* has in it 1 *Hour*, it is plain, the Product should be 24 times greater, *i. e.* 24 times 224 *l.* since 1 *Day* has 24 *Hours*. Now as such Questions, never fall to be simply proposed, in any Business, without some other Circumstance that limite them to the Sense above explained; we must refer to the *Rules of Proportion* following; where we shall see how such *Multiplications* actually occur, and are performed; tho' here was the proper Place for this Observation. 4*to*, In the following *Cases* for the *Application of Multiplication*, I have made few practical Questions; seeing I have so plainly shown the *Import of Multiplication*: Common Sense will always direct when *Multiplication* is to be used, according to the Nature of the Question; besides, I shall have occasion afterwards in treating of Proportion, to show the *Application of Multiplication* more compleately; and therefore shall be content with this general Reflection, *viz.* That from the *Definition of Multiplication* already given, 'tis manifest that all Questions solvable by *Multiplication*, return to this Sense, *viz.* the finding a *Number* which shall contain a *given Number*, (which is the *Multiplicand*) as oft as another given Number, (the *Multiplier*) contains *Unity*. We shall have this illustrated in the *Cases* and *Examples* below.

I proceed to the Application proposed in two Cases.

Case 1st, To multiply *simple Numbers*, or the highest Denomination of *mixt Numbers*; this must be done by the general Rule; *Example*, to multiply 18 *l.* by 4, the Product is 72 *l.* We are to do the same with any *Species* of *mixt Numbers*, if the Product is required only in the same *Species*: *Example*, 14 *s.* by 5, the Product is 70 *s.*

Quest. 1st, There are 7 Bags, in each of which is contained 42 *l.* how much is in the whole? 'Tis plain there must be 7 times 42 *l.* equal to 294 *l.* a Number of *libs.* which contains 42 *l.* as oft as 7 does 1.

Quest. 2d, In 64 *l.* (each whereof is equal to 20 *s.*) how many *shil?* Here the Sense is manifestly, to find a Number of *sh.* which shall contain 20 *s.* as oft as 64 does 1, so that 20 *s.* is properly the *Multiplicand*, which in the *Operation* is as if it were an *absolute Number*, the *Product* is 1280 *s.* but as I said before, the *Product* is the same if we consider it as 64 *l.* to be taken 20 times.

Nota,

Reduction by Multiplication.

NOTA, All Questions of this Kind, where it is required to find how many *Units* of one Denomination are contain'd in a certain Number of another, are ordinarly called Questions of Reduction, or the reducing one *Denomination* to another; which requires always that we know the *Relation* of the two *Denominations* or *Species*, *i. e.* how many *Units* of the lower make 1 of the higher: Therefore all *Questions of Reduction*, from one *Species* to another of the same *mixt Number*, are either 1st, From a higher to a lower; performed by multiplying the *given Number* of higher by the *given Relation*. Or 2d, From a lower to a higher, performed by *Division*; whereof in its Place: I shall then give an *Example* or two of the 1st Kind.

BUT if the *Number* to be reduced is *mixt*, then we must begin at the highest, and at every *Species* found, we take in, by *Addition*, the odd Number of that *Species*.

EXAMPLE 1st.

In 372 *Lib.* 16. *ſh.* 7 *d.* how many *d.*

OPERATION.

372 *lib.* 16 *ſh.* 07 *d.*
20

7440 *ſh.*
16 *ſh.*

7456 Total *ſhillings.*
12

14912
7456

89472 *d.*
7 *d.*

89479 Total *d.*

EXAMPLE 2d.

In 462 *Lib.* how many *s.* or *d.* or *f.*

OPERATION.

462 *Lib.*
20

9240 *ſh.*
12

18480
9240

110880 *d.*
4

443520 *f.*

EXAMPLE 3d.

In 64 *Stone*, how many *Pound* or *Ounce.*

OPERATION.

64 *Stone*
16

384
64

1024 *pd.*
16

6144
1024

16384 *Ounces.*

IN all theſe *Examples* of *Reduction*, every *Multiplication* to a new *Species*, is a new diſtinct *Queſtion.*

CASE 2d, To multiply *mixt Numbers*. Begin at the loweſt *Denomination*, and ſet down in every *Species* only the Odds of an *Unit* or *Units*, of the next higher *Denomination*, which *Unities* carry forward to the *Product* of that next higher *Species*;

cies; But there are few *Cases* that occur where this can be practiſed, without unreaſonable *Suppoſitions*; as when the *Multiplier* is very great: For *Example*, to multiply 468 *l.* 14 *s.* 10 *d.* by 572: And therefore the *general Rule* for this *Caſe* is, to reduce the *given mixt Number* to the loweſt *Species*, and multiply it in that *Species*; the *Product* by an oppoſite *Reduction* (to be taught in *Diviſion*) may be reduced upward again, and appear in all the *diſtinct Species*.

QUEST. There is in each of 4 Casks, 7 *Stone* and 13 *Pound Tobacco*, How much is in all?

OPERATION.

7 *Stone* 13 *Pound*;
16

112 *Pound* by Reduction,
13 Odd,

125 Total *Pound*,
4

Product 500 *Pounds* required.

CHAP. V.

DIVISION.

§. 1. *Definitions.*

DEFIN. *1ſt*, EVERY greater *Number* compared with a *Leſſer*, may be called, *The Whole*; and the Leſſer may be called, *A Part thereof*; for as the Part is contained in the Whole, ſo is every leſſer Number contained in a Greater.

2do, IF the Greater contains the Leſſer a certain Number of Times, without any Thing over; it is called a *Multiple of that Leſſer*; which in this Caſe is called an *aliquot Part* of that Greater, as 12 is a *Multiple* of 4, becauſe it contains it exactly 3 Times; and therefore 4 is an *aliquot Part* of 12.

3tio, That *Number* which expresses how oft the *Multiple* contains its *aliquot Part*, is the *Denominator* of that Part, so in the preceeding *Example*, because 12 contains 4 three Times, therefore 4 is a third Part of 12.

4to, If the Lesser is not contained precisely in the Greater, without some Odds, it is called an *aliquant Part* of it; as 5 is an aliquant Part of 12, which contains it twice, and 2 over.

Nota, These are Terms of Art, which will be useful to prevent too many Words in explaining what follows.

5to, As **Multiplication** was only a *compendious Addition*, teaching how to take (*i. e.* add) any Number, a certain Number of Times; so **Division** is a *compendious Substraction*, teaching how to separate or take away any Number from another greater, as oft as possible; in Order to find how oft the Lesser is contained in the Greater, or what Part of the Greater that Lesser is equal to, if 'tis an *aliquot Part*; but if 'tis *Aliquant*, then we find moreover what remains when the Lesser is taken away as oft as it can be. For *Example*, if 'tis proposed to divide 18 by 6, it may be done by substracting 6 from 18, remains 12, again 6 from 12, remains 6, then 6 from 6, remains 0, so that by continual substracting the lesser *given Number* from the greater, and then from every following Remainder that's greater than its self, we find the Answer; as here 6 can be taken from (*i. e.* contained in) 18, 3 Times, or is a third Part of it, and 0 remains: The same Way we may find 13 contained in 184, 14 Times, and 2 remains. But as this would prove extreamly tedious, a more convenient Way of finding the Answer is taught under this Name of **Division**, where we ordinarly call the Number to be divided the **Dividend**, the other the **Divisor**, and the Answer is called the **Quote** (*i. e.* which shows how many Times, *&c.*): if there is no Remainder, that *Division* is called *perfect*, otherwise it is *imperfect*.

Consequence from this Explication, it is plain that *Multiplication* and *Division* are directly opposite in their *Sense*: For as *Multiplication* imports, the finding a Number, (as 24), which shall contain a *given Number*, (6), a *given Number* of Times, (4), so it is evident, that this given Number (4) expresses how oft the other given Number (6) is contained in the *Product* found (24)—that is, 6 is contained in 24, 4 Times, or 4 is the *Quote* of 24 divided by 6; from which 'tis clear, that *Multiplication* and *Division* mutually prove each other; for if *Division* shows how oft one Number is contained in another, then that *Number* so oft taken, *i. e.* multiplied by the *Quote*, must produce that other (*i. e.* the *Dividend*); that is, in *Multiplication* the *Product* divided by the *Multiplicand*, will *quote* the *Multiplier*. But again, since in *Multiplication* 'tis sufficient which of the *given Numbers* be called *Multiplier*, the Product being still the same, it must also be indifferent, by which of them you divide the Product; for the other must always be the **Quote**; and so the Sense of Division will not only be, to show how oft one Number is contained in another, but it may also be thus expressed, *viz.* to find a *Number* which shall be contained in a *given Number*, a certain given Number of *Times*; as, to find a Number which shall be contained in 24, 6 Times, is plainly to divide 24 by 6;

or

or to find how oft 6 is in 24; ſince 4 Times 6, and 6 Times 4, are always the ſame Thing. Tho' it may ſeem I have anticipated the *Proof* of *Diviſion*; yet I think it very intellegible, after the given *Definitions*; but it was alſo neceſſary to explain theſe Things here, that there be nothing precarious in what is ſuppoſed, to the *General Rule of Diviſion*, *viz.* that we know how oft 9, or any leſſer Number is contained in any greater Number leſs than 90, as 89, *&c.* which may well be ſuppoſed, ſince by the *Table of Multiplication*, we have learn'd how to know the *Product* of any *Digit* by another; for *Example*, we know that 9 by 7 produces 63; therefore if we were to divide 63 by 9 or 7, the *Quote* is 7 or 9; and this Suppoſition goes no further than 89, becauſe by the *Rule* we are to find the *Quote* by *Parts*; that is, one *Figure* at every *Operation*; now by the **Rule of Notation** 90 (and all above) contains 9, 10 Times, *&c.*

§ II. *General Rule of Diviſion.*

HAVING ſet your *Dividend* and *Diviſor* as below, *1mo*, See how oft, the firſt Figure of the *Diviſor* (next the left Hand) is contained in the firſt Figure of the *Dividend*, or in the two firſt, if the firſt is leſs than the Diviſor Figure, and ſet that (*i. e.* the Number how oft) in the *Quotient*: Then conſider, if the firſt Figure of the *Diviſor* is leſs than that of the *Dividend*, in that Caſe, take as many Places of Figures from the left Hand of the *Dividend*, as there are in the whole *Diviſor*, but if the firſt Figure of the *Diviſor* is greateſt, you muſt take one Place more from the *Dividend*, under which ſet down orderly the *Product* of the whole *Diviſor*, multiplied by the *Figure* of the *Quote* found; then ſubſtract that Product from the Figure of the *Dividend* that ſtand above it, and write down the Remainder: Now it is plain, if that *Product* is greater than the ſaid *Figure* of the *Dividend*, the *Quote Figure* is too great, for it ſhows the Diviſor is not contained ſo oft in that Part of the Dividend; but if 'tis leſs, then it is as plain, if the *Remainder* is equal to, or greater than the *Diviſor*, that the *Quote Figure* is too little, ſince the *Remainder* being a Part of the Dividend, ſignifies that the Diviſor was oftner contained; therefore in finding the *Quote Figure*, we are not always to take it as oft, as poſſible the firſt *Figure* of the *Diviſor* can be found in the firſt, or two firſt of the *Dividend*; for ſuch Regard muſt always be had to the other Figures of the Diviſor, that the foreſaid Product may be ſubſtracted, and the Remainder be leſs than the Diviſor, the firſt Figure of the *Quote* being then truly found. *2do*, Bring down the Figure of the Dividend that ſtands next to theſe, from which the laſt *Product* was taken, and annex it on the right Hand, to the Remainder; then conſider all that, as a new *Dividend*, with which (being greater than the *Diviſor*) find another *Quote Figure*, the ſame Way as you found the laſt, and ſet it on the Right of the laſt *Quote*: But if that new Dividend is leſs than the Diviſor, ſet 0 in the *Quote*, and bring down another Figure of the Dividend, to make a new Dividend, with the *Quote Figure* now found, multiply and ſubſtract as before; then bring down the next Figure of the Dividend; and ſo on till all the Fi-

gures of the Dividend are brought down; and you have the *Quote* fought: If there is no Remainder after the laſt Figure of the Dividend is brought down, and Diviſion performed, then is the Dividend a Multiple of the *Diviſor*, otherwiſe not.

Example.

	Dividend	Quote.
Diviſor 6)	7248	(1208
	6	
	12	
	12	
	0048	
	48	
	00	

Example.

	Dividend	Quote.
Diviſor 34)	234672	(6902
	204	
	306	
	306	
	00072	
	68	
	04	Remains.

Now this *general Rule* (altho' we know eaſily to find, how oft 9 or any Thing below, is contained in 89, or any Number leſs,) is but precarious; ſince the Allowance to be made for the remaining Figure of the *Diviſor*, (when it has more Places than one) makes the *Operation* the ſame in effect, as if we were at firſt to find, how oft the whole *Diviſor* is contain'd in an equal Number of Places taken from the *Dividend*, which we may call the firſt *partial Dividend*, (if theſe make a Number equal to, or greater than the *Diviſor*; otherwiſe we take in another *Figure* of the *Dividend*) and after that, in the whole *Remainder* with the *Figure* of the *Dividend* brought down, *i. e.* the whole new *partial Dividend*: But it is certainly extravagant to give the *Rule* in theſe *Terms*, without ſome other Help for finding the *quote Figure*: For it would be little better, than pretending to teach us how to divide, by telling, we muſt gueſs, or ought to know, how oft one Number is contained in another, at leaſt, how oft any Number is contained in any other of equal Number of Places, or of one Place more, (if an equal *Number* on the left Hand, be leſs than the *Diviſor*) which 'tis true can never be above nine Times, (as I ſhall preſently demonſtrate) but yet makes the *Rule* too precarious and difficult, without more Help: Now from the *Nature* of *Multiplication* and *Diviſion* as explained, we have the following Aſſiſtanc, *viz.* make a Table (as you ſee below) in which put the *Product* of the *Diviſor*, multiplied ſucceſſively by 2, 3, *&c.* to 9, and then 'tis plain you'll find every Figure of the *Quote*, by Inſpection into this *Table*; thus compare your *partial Dividend* with the *Products* in this *Table*, your true *quote Figure* is that *Digit* ſtanding againſt the *Product*, next leſs than in the ſaid *partial Dividend*, which is evidently true from the *Conſtitution* of that *Table*, in which theſe *Digits* are the ſeveral *Multipliers* of the *Diviſor*, which made theſe *Products*: If the *partial Dividend*, is leſs than

than the *Diviſor*, then the *Quote* is 0; and we annex another *Figure* of the *Dividend*, and ſo on. Perhaps this may be reckoned troubleſome; but it is certain, there is not another Way to make a *general Rule*, without unreaſonable Suppoſitions; I acknowledge, that much Practice will make one perform *Diviſion* eaſily without this *Table*: But in the natural Order of explaining and giving *Rules* for *Arithmetick* Practice, we ought to make no ſuch Suppoſition: And beſides you are ſav'd the *Multiplication* of the *Diviſor* by the *quote Figure*, that being done in the *Table*, from whence you have only to transfer it; and therefore the Trouble of making a *Table* is nothing; eſpecially in *large Diviſions*, where there may be many Places of *Figures* in the *Quote*, or in ſuch Caſes where you are to uſe the ſame *Diviſor* frequently; and therefore I would have the *general Rule* taken in the Terms laſt mentioned, (with this very natural Help for finding each *Figure* of the *Quote*, which will make the Work be perform'd very quickly.

EXAMPLE.

	Diviſor	*Dividend*	*Quote*
1	57	) 346.7.2.1.9.0.5.8.	(60828404
2	114	342	
3	171		
4	228	60472	
5	285	456	
6	342		
7	399	161	
8	456	114	
9	513		
		479	
		456	
		230	
		228	
		0258	
		228	

30 Remains

NOTE, The *Quotient* ſignifies, that the *Dividend* contains the *Diviſor* 60828404 times, and 30 over; but as for the ſeveral Senſes of the *Quote* and *Remainder*, I refer to the *Application* of *Diviſion*.

§ III. *Reaſons of the Rule of Diviſion.*

1. I Shall demonſtrate, that no *Number* is contained more than 9 Times, (with ſome Odds perhaps) in any other of *equal Number* of *Places*, or of *one Place* more, when as many of the Places of this towards the left Hand make not a *Number* equal to the firſt. As to the 1ſt Part 'tis plain, from the *Nature* of *Numeration*; for to make a *Number* 10 Times greater than ano-

another, it must have at least one Place more: So the least *Number* of two Places, *viz.* 10, cannot be found 10 Times in the greatest of two Places, 99; for 10 Times 10, makes 100; now if the least cannot be found out of the greatest, far less a greater in a lesser; but the Truth of this is universal from the Property of *Numeration*, taking the least and greatest of all *Number* of *Places*. The 2d Part is true, because, if one *Number* is not once found in another, it cannot be found 10 Times, in that *Number* 10 Times taken, (as it is by adding one Place more on the right Hand) and tho' you put the greatest *Digit* 9 in that Place, it cannot make up the Defect; since the 1st *Dividend* wants at least 1 to be equal to the *Divisor*; and therefore that *Dividend* when 10 Times taken, must at least want 10, to contain the *Divisor* 10 Times: For Example, (20) 199, 'tis plain since 20 is not found once in 19, it cannot be found 10 Times in 190, nor can 9 (*i. e.* 199) make it up: But 'tis universally true from the foresaid Demonstration. Now this is one Part of the *Rule* demonstrated, *viz.* that following the Direction thereof, we shall never find but one *Figure* of the *Quotient* at once. 2. It is a very evident Truth, (especially as it is exactly opposite to the like demonstrated in *Multiplication*) that if any *Number* is any how separated, or resolved, into Parts, and these Parts singly divided by any *Number*, the Sum of these *Quotients* is equal to the true *Quote* of the Whole divided by the same *Divisor*: For as the Parts constitute the Whole, so 'tis plain, as oft as the *Divisor* may be found in all the Parts, so oft it is contained in the Whole, thus I find 4 in 8, twice, in 12, 3 Times, and in 20, 5 Times, that is, 10 Times (the Sum of the Quotes 2, 3, and 5,) in 40 the Sum of 8, 12, 20. Now I shall show, that the *Rule* of *Division* actually resolves the *Dividend* into Parts; and that the *Quote* found is the true Sum of the *Quotes* of the *Division* of these several Parts: One *Example* will sufficiently shew this.

EXAMPLE.

```
24) 81748 (3406
    72
   -----
    097
     96
   -----
     148
     144
   -----
       4 Remainder
```

Here the *Dividend* is equal to 81000, 700, 40 and 8: Now first, I divide 81000 by 24, the *Quote* is 3000, and 9000 remain, *i. e.* 81 divided by 24, *Quotes* 3 and 9 remain, but the Dividend being actually 81000, both the Quote and Remainder must be also 100 Times more, or 3000 and 9000: But this Remainder is a Part of the total Dividend; and therefore to it is added another

another Part of the Dividend, *viz.* 700, the whole 9700 is a new Part of the Dividend, in which I find 24 contained 400 Times, *i. e.* 97 divided by 24 *Quotes* 4, but it muſt be 400, ſince the Dividend is really 9700; conſequently, this new *Quote* muſt ſtand in the Place next the laſt *Quote*: The Remainder of this Diviſion is 100, and being alſo a Part of the given Dividend, to it I add another Part, *viz.* 40, the Whole is 140; but 24 cannot be found in 14 once, or it cannot (by the firſt Part of this Demonſtration) be found in 140, 10 Times; and therefor the next Figure of the *Quote* cannot ſtand in the Place next the laſt, (which was in the Place of 100) and that is the Reaſon of an 0, in the *Quotient*; ſo add another Part of the Dividend, *viz.* 8, the partial Dividend becomes 148, in which I find 24, 6 Times, and 4 remains; and ſo the true *Quote* ſought, is 3406, (and 4 over) the Sum of the ſeveral partial *Quotes*, by this plain and eaſy Reſolution. Now 'tis plain, that by the Rule, we thus actually reſolve each Dividend into Parts, and divide each Part ſeverally; 'tis alſo plain, that all the *Quotes* ſet down in a Rank, from Left to Right, as they are found, is the true Sum of theſe *Quotes*; for whatever Place the 1ſt *Quote* ſtands in, if the Remainder with another Place of the Dividend brought down, is equal to, or greater than the Diviſor, then the next *Quote* muſt ſtand in the Place next to the laſt *Quote*, on the right Hand; becauſe that Figure of the Dividend brought down, is in the next lower Place, (below) to the laſt partial Dividend, and ſo on: But if any Remainder, with the next Place of the Dividend, be not equal to the Diviſor, then the next Place of the *Quote* muſt have an 0, becauſe when you have brought down any other Place of the Dividend, all this will not contain the Diviſor 10 Times, but ſome thing leſs; and conſequently the *Quote* now found, muſt not ſtand in the Place next the laſt *Quote*, (for the Value of the Places by the Nature of *Numeration*, decreaſe from Left to Right, at the Rate of 10 Times leſs;) and therefore a *Nought* muſt be put betwixt them: And as oft as it falls out, that another Place of the Dividend brought down, makes not the partial Dividend great enough, ſo oft muſt an 0 be put in the *Quote*; which may fall out to be ſeveral Times on end.

FROM the Rule of Diviſion (now demonſtrated) *obſerve*, that we may know, how many Places of Figures the *Quote* will have, before we perform the Work; for there will be one for the firſt partial Dividend, and one for every other Place of the Dividend.

§ IV. *Proof of Diviſion.*

THIS has been already explained: I ſhall only add, that when there is a Remainder of the Diviſion, it muſt be added to the Product of the Diviſor and the Quote, and the Sum will be equal to the Dividend; for that Remainder is really a Part of the Dividend, after the Diviſor is taken out of it, as oft as poſſible. You may prove Diviſion by making the laſt *Quote* the Diviſor, the new *Quote* will be the old Diviſor, and the Remainder the ſame; as 'tis plain from what has been ſaid of the Nature of Diviſion and Multiplication:

cation; You may also prove it, by casting out the 9's as in Multiplication, thus, first substract the Remainder from the Dividend, this Remainder is plainly that Part of the Dividend, which contains the Divisor precisely, as oft as the *Quote* expresses: Therefore, take the Divisor, Quote and Dividend, and do exactly with them, as with the *Multiplier*, *Multiplicand* and *Product*, in casting out the 9's in *Multiplication*.

§ V. *Division applied.*

IN the first Place I must observe, from the plain Sense of Things and Nature of Division, that the Divisor and Dividend may both be affected with Denominations, but they must signify the same Kind of Thing, as both Money, or both Weight, &c. for 'tis a rational Question to ask, how oft (for Example) 4 *l.* is contain'd in 16 *l.* the *Quote* will be *absolute*, signifying how oft? Or it may be asked what Part of 16 *l.* is 4 *l.*? and the *Quote* is still absolute, and denominates the Part. But to divide Money by Weight, (or such like Question) is absurd, and falls in with no Sense of Division, unless qualified thus, *viz.* to find a *Number* of *Money* that shall be contained in the given Dividend, as oft as the given Divisor (of Weight) contains an *Unit*, (or any other Number of any Denomination of that Weight;) and then as I said at *Multiplication*, the *Question* is changed, and no more a simple Question of Division. How Questions occur that are seemingly thus propos'd? What is their Sense? And how they are wrought? I shall explain, when I come to *Proportion*, but it was useful to remark this here. In the next Place, it is plain, that the *Dividend* being *absolute Number*, the *Divisor* must be so too, and the *Quote* the same: But the *Dividend* may signify something, and the *Divisor* be absolute, the *Quote* will be like the Dividend, and the Sense of the Question is, for Example, to find what is a 5th Part of 20 *l.* the *Quote* is 4 *l.* These Things being understood, all simple Questions of Division, are contain'd in two Cases.

Case 1. To *divide* one simple Number of any Denomination of Thing, by an absolute Number, or by another simple Number of the same Denomination, this is done by the *general Rule*: The Sense of the *Quote* is known by what is premised.

Quest. 1. What is the 3d Part of 72 *Guineas*? By Division it is 24 *Guineas*: *Note*, This *Question* is of the same Sense, as if it had been thus proposed, *viz.* There is a Bag of Money containing 72 *Guineas*, belonging to 3 Men; what is each Man's Part? But from the Sense of the *Question*, the Divisor is not 3 Men, but 3 absolute, because a 3d Part of 72 is the *Answer*.

Quest. 2. In 680 *Shill.* (20 whereof make 1 *Lib.*) how many *Lib.* are contained? 'Tis certain, as oft as 20 *Shill.* is found in 680 *Shill.* so many Pounds there are; and 680 *Shill.* divided by 20 *Shill.* quotes the Answer sought, 34 *Lib.* *Observe*, If it is simply proposed to divide 680 *Shill.* by 20 *Shill.* the *Quote* 34 is absolute, signifying that 20 *Shill.* is contained 34 Times in, or is a 34 Part of 680 *Shill.* but that it has here the Denomination of *Lib.* is accidental to Division

vision, and depends on the Circumstance of the *Question*; and therefore, what I premised concerning the Quality of the *Quote*, will hold only in simple Questions, which certain Circumstances may change; but the Reason will always be plain from the Nature of the Question, as it is in this.

NOTA, From what I observed in *Multiplication*, this last is a Question of *Reduction*, from a lower *Species* or *Denomination* to a higher, which by a general Rule, is perform'd by dividing the given Number by the given Relation, as here, *Shill.* are divided by 20 the Relation of a *Shill.* to a *Lib.* the Remainder is always like the Dividend. I shall give a few *Examples* more of this Kind, where *Pence* are reduced to *Shill.* and then to *Lib.* by the Method of which, every other Kind is to be understood.

EXAMPLE.

In 13440 *Pence*, how many *Shill.* and *Lib.*

Operation.

d.	20)*s.*	*l.*
12) 13440	(1120	(56
12	100	
14	120	
12	120	
24	000	
24		
000		

EXAMPLE.

In 10256 *Pence*, how many *Shill.* and *Lib.*

Operation.

d.	20)*s.*	*l.*
12) 10257	(854	(42
96	80	
65	54	
60	40	
57	14 *s.*	
48		
9 *d.*		

In this *Question*, the whole *Answer* is plainly 42 *l.* 14 *s.* 9 *d.*

Case 2d, Where Dividend and Divisor are simple Numbers, having both some (but a different) Denomination of the same Kind of Thing, or the Dividend mixt, and the Divisor absolute; or both mixt Numbers.

Rule, Let the Divisor and Dividend be both reduced, by Multiplication, to one Name (or the Dividend, if 'tis mixt, and the Divisor absolute) and then divide by the general Rule.

QUEST. 1. How oft is 4 *Lib.* contained in 9 *Lib.* 18 *Shill?* both being reduced to *Sh.* are 80 *Sh.)* 198 *Sh.* (the Quote is 2 Times, and 38 *Sh.* remains; so the Sense is, that 80 *Sh.* is twice contained in 198 *Sh.* after 38 *Sh.* is taken from the said 198, or that twice 80 *Sh.* with 38 *Sh.* more, is equal to 198 *Sh.*

QUEST. 2. What is a 7th Part of 56 *Lib.* 16 *Shill.* 8 *d?* this mixt Number reduced by *Multiplication* is 13640 *d.* which divided by 7, Quotes 1948 *d.* and 4 remains, which ought again to be divided by 7, if possible; but I say the true Quote is 1948 *d.* and $\frac{4}{7}$, *i. e.* four seventh Parts of a *Penny*. The explaining this, brings me to what I referred hither, *concerning the Remainder in Division*, which take thus——*Division* (as I already observed) is imperfect, when there

is

is any Remainder; but how that Remainder is to be considered, in order to make the Answer of the Question complete, depends upon the various Sense of the Question. I shall take one *Example* in pure Numbers to examine, let 4679 be divided by 32, the *Quote* is 146, and 7 remains; now this Question may have 4 Senses. 1*mo*, It may be required to find how oft 32 is contained in 4679, *i. e.* how oft this contains that? The Answer is 146 Times, and seven thirty two Parts of a Time (which may be written thus $\frac{7}{32}$ Parts) for every 32 found in the Dividend is one, or 1 Time, for the Quotient; so every Thing over, less than 32, is a Part of a Time (*i. e.* of 32) but 32 being 32 *Units*, if the Remainder were 1, it would be $\frac{1}{32}$ Part of a Time; and consequently 2, 3, *&c.* $\frac{2}{32}$ $\frac{3}{32}$, *&c.* and therefore our Remainder is $\frac{7}{32}$ Parts of a Time; that is, the Dividend contains the Divisor 146 Times complete, and 7 *Units* of that Divisor more; which is plainly $\frac{7}{32}$ Parts of it. And thus we may always order the Remainder and Divisor, and call the Remainder such a Part or Parts of a Time (*i. e.* of the whole Divisor.) 2*do*, The Question might be thus proposed, *viz.* to find a Number which 4679 shall contain 32 Times? The Answer is 146 $\frac{7}{32}$, *i. e.* 146, and $\frac{7}{32}$ Parts of an Unit. This is plainly reciprocral of the 1st Sense.

3*tio*, Let the Sense of the Question be, to find a 32d Part of 4679, (which is the same in Effect as the 2d, the Answer is 146, and $\frac{7}{32}$ Parts of an *Unit*: It is certain, the Remainder is a Part of the *Dividend*, and unless that be also divided, the whole Dividend is not so; and consequently the Quote is not a 32d Part of the whole Dividend: 'Tis only a 32d Part of the Dividend, after the Remainder is taken from it; and to have the true Answer, we must order the Remainder as above; because, if the Remainder is 1, 'tis plain a 32d Part of this is $\frac{1}{32}$ Part of an *Unit*; consequently the Remainder 2, 3, *&c.* will make $\frac{2}{32}$ $\frac{3}{32}$ Parts, *&c.* $\frac{7}{32}$ Parts; and therefore the Remainder thus ordered, perfects the Answer: And from what's here shown, 'tis evident, that when a lesser Number is given to be divided by a greater, as 3, by 7; the true Quote is $\frac{3}{7}$ Parts of *Unity*; that is, set always the Dividend over the Divisor, which denominates the Part, and the Dividend is the Number of such Parts: It will follow by the same Reason, that tho' the Dividend be greatest, yet the Quote may be thus expressed: For if 8 be divided by 3, the Quote may be expressed $\frac{8}{3}$, which is a true Quote, tho' improperly expresst; a further Account whereof, belongs to the Doctrine of *Fractions*.

4*to*, The Sense may be, to find, what Part of 4679 is 32 equal to? The Quote is still the same, *viz.* 146 $\frac{7}{32}$ Parts, but when there is a Remainder, the Quote will not denominate the Part; for the Divisor is not an *aliquot Part* of the Dividend: Yet in such Cases we may answer the Demand by setting the Divisor fractionally over the Dividend; for 'tis certain, that 32 is equal to 32 4679 Parts of 4679; but more of this when we come to *Fractions*.

Now as to the first Sense, the Answer is always perfect.

In the Second and Third Senses, the Answer appears with this Difficulty, *viz.* That in explaining what *Unity* and *Number* were, we conceived an *Unit* as a Thing indivisible, or at least undivided, and now we have not a perfect Answer,

ſwer, till we conceive the ſame *Unity* as divided; but there is no Difficulty here, for we can apply the *Idea* of *Unity* to what we pleaſe; and ſo we call a certain Quantity of Money 1 *Lib.* and immediately we may apply the ſame *Idea* to other Parts of Money leſs than 1 *L.* as 1 *S.* whereof 20 make up 1 *L.* now a Number of *Shills.* is as properly a Number, as of *Libs.* but according to the Difference of the *Unit* (or firſt Principle of the Numbers); ſo is the different Value of the Number: So 3 *Shill.* for *Example*, is ſtill three Things as really as 3 *Lib.* only the Individuals which conſtitute them differ; and we way chooſe to call it 3 *Shill.* or $\frac{3}{20}$ Parts of 1 *Lib.* the firſt is an *integral Number*, as we call every Number ſimply expreſt, without referring it (as a Part) to any greater *Unity*: The other *Fractional*, where the Value of each *Unit* is expreſt relatively as a Part of a greater *Integer* or *Unit*, *viz.* 1 *Lib.* yet ſtill 'tis a proper Number of 3 Things. But from this Way of Expreſſion, there ariſes different Ways of Operation, to be taught in the proper Place; and as to the Application of this, I ſay, as long as the Queſtion is in abſolute Numbers, the Anſwer, where the Diviſion has a Remainder, muſt be taken according to the Senſe of the former Explications: But when you conceive the Numbers to ſignify certain Things; then, a Part of an *Unit* may ſometimes be found and expreſſed integrally, by conſidering what leſſer *Species* the Thing contains in it; which I ſhall immediately explain by *Example* and give *Rules* for. And if it has no inferior *Species*, we may at leaſt conceive it in our Mind, to be made up of any equal Number of Parts: The Notion of *Unity* and *Number*, is as applicable to thoſe imagined Parts, as to the Whole, or any Number of them. The 1ſt three, (but chiefly the 2d or 3d) are the ordinary Senſes to which moſt Queſtions ſolv'd by *Diviſion* come. I wo'nt here any further prevent the Definition of a *Fraction*, which belongs to (and ſhall be explain'd fully in) another Place; but I muſt remark, that as it ſignifies a Part or Parts of any Thing or *Unit*, for *Example*, $\frac{3}{4}$ or 3, 7th Parts of a *Lib.* ſo the original of theſe *Numbers* called *Fractions*, is from imperfect *Diviſion*, where the Remainder is not reduceable to any inferior *Species*, or at leaſt not reduced; for then, to complete the *Quotient*, we muſt ſet the *Remainder* Fraction-ways with the *Diviſor*, which ſignifies a Part or Parts of an *Integer* or *Unit* of the *integral Quotient*. In all this *Courſe of Arithmetick*, till we come to the *Doctrine of Fractions*, we ſhall ſee this exemplified; and I ſhall take Liberty to uſe this word Fraction for Brevity, becauſe I think we have already the *general Notion* of it; which you ſee how naturally it fell to be explain'd here, when we were obliged to remark the Cauſe of *fractional Numbers*.

Now for the further Application of Diviſion take this Rule.

When the *Dividend* ſignifies any Kind of Thing, the *Quotient* ſignifies always the ſame, and alſo the *Remainder*, if by the Senſe of the Queſtion they ſignify any thing; (except the *Queſtions of Reduction*, for which I have particularly accounted at Quest. 2d Caſe 1.) therefore to complete the *Anſwer*, reduce the the *Remainder* to the next lower Denomination, (by *Multiplication*) and divide the *Product* by the *Diviſor* of the *Queſtion*, and you have a Part of the *Anſwer*, in *Units* of that *Species*; if there is a *Remainder* in this laſt *Diviſion*, reduce it to

the next, and divide; and ſo on till you come to the loweſt *Species*; and then if there is a *Remainder*, you cannot make any thing of it, but a *Fraction* of an *Unit* of that lower *Species*; which in a ſingle Caſe is of no Conſideration, ſeeing it can neither be given nor received: But where many ſuch *Fractions* are to be added, the Sum may be conſiderable; the *Operation* ſhall be taught in the proper Place.

QUEST. what is the 7th Part of 468 *l.* the *Anſwer* is 66 *l.* 17 *ſh.* 1 *d.* $2\frac{4}{7}$ *far.*

OPERATION.

Lib. Lib.

7) 468 (66
42

48
42

6 *lib.* remains
20 reduce

7) 120 (17 *ſh.*
7

50
49

1 *ſh.* remains
12 reduce

7) 12 (1 *d.*
7

5 *d.* remains
4 reduce

7) 20 ($2\frac{4}{7}$ parts *f.*
14

06

§ VI. THUS have I gone thro', with the *fundamental Operations* in *Arithmetick*; and explain'd the Nature and Reaſon of them, in the moſt diſtinct and intelligible Manner I could think of: By which, I hope, the Thing that remains to be done, in finiſhing my propoſed Courſe of *Arithmetick*, will become eaſy, both for me to deliver, and for others to underſtand; which, without a clear Notion of the *fundamental Parts*, are always a mighty Difficulty, eſpecially in the Application.

THE *Parts* of *Arithmetick* already handled, are called **Fundamental**, becauſe there are no other diſtinct *ſimple Operations*; what other RULES there are, being only the Application of theſe. Therefore, when we come to apply theſe *fundamental Operations* of *Arithmetick* to Queſtions, variouſly compoſed of Circumſtances that occur in humane Affairs; we muſt apply the one or other, or more than one of them, according to the different Senſe of the Queſtion, or the ſeveral Parts of the ſame complex Queſtion; of which we have ſeen already ſome *Examples*; which are all we are to expect in this Treatiſe, and ſufficient to any Body of common Senſe, for *Addition* and *Subſtraction*: But the *Application* of the other Two has more Difficulty, and we ſhall find it largely in what follows.

BEFORE I enter upon the *Doctrine* of **Proportion**, I muſt *obſerve*, That ſome reckon it the moſt natural Order, to teach the *Operations* in *Fractions* firſt; Becauſe the whole *Theory of Proportion* is the ſame, in Numbers *Integrally* or *Fractionally* expreſſed: Now tho' this be true, yet the *Operations* in *Fractions* being more perplexed, would be very unfit *Examples* for explaining *Proportion*; nor are they uſed for that Purpoſe: **Proportion** concerns *Number* abſtractly, and therefore 'tis enough to have it explain'd by *integral Expreſſions*: Beſides, the

Know-

Knowledge of *fractional Operations*, can help us nothing to the underſtanding *Proportion*; but this we ſhall find of great ſervice, in explaining and giving Reaſons for the other; and then when we are acquainted with the *Doctrine of Fractions*, we may apply them to all the *Rules of Proportion*, with the ſame Eaſe (to the Underſtanding) as *integral Numbers*; and in the Application which I am to make of *Proportion*, I ſhall take care to remark ſuch Things as have a Connection with *Fractions*; ſo that the Application of theſe ſhall be very eaſy in their Place.

The great *Medium* for ſolving *arithmetical Queſtions*, is the *Knowledge of Proportion*; or theſe particular *Properties of Numbers*, that have been diſcovered and demonſtrated by comparing Numbers one with another; and which ſerve as an Inſtrument, for diſcovering more and more of the *Myſteries* contain'd in *Numbers*, according as they are variouſly compoſed of leſſer Numbers, and mutually compared; and therefore ſome have called this Part **Comparative Arithmetick**, and the preceeding Parts **Abſolute Arithmetick**.

I ſhall in the next Place then, endeavour to explain the *Doctrine of Proportion* in *Numbers*; and after I have delivered the *Theory* in as plain Terms as I can, I ſhall attempt the *Application*.

CHAP. VI.

Concerning Proportion, *or the* Compariſon *of* Numbers.

§ 1. *Definitions.*

1ſt. IN all *Compariſon* of *Numbers*, the Number compared is called the **Antecedent**, and that to which it is compared, the **Conſequent**.

2d, Numbers may be compared, one with another, two Ways; they may be conſidered with Reſpect to their ſimple Difference, *i. e.* How much the one, *viz.* the *Antecedent*, is greater or leſſer than the other, *viz.* the *Conſequent*, to be obtain'd by *Subſtraction*; the Difference is called the *Arithmetical Ratio* (or Relation) of the two Numbers compared; ſo 5 is the *Arithmetical Ratio* betwixt 12 and 7, ſignifying that 12 exceeds 7 by 5; or that 7 wants of 12, 5; for either of them may be conſidered as *Antecedent* or *Conſequent*.

Consequence, To find a Number greater or leſſer, than a given (*i. e.* a known or propos'd) one, and whoſe *Arithmetical Ratio* to that given one, ſhall be alſo a given Number; the *Rule* is, *add* or *ſubſtract* the given *Ratio* to, or from, that other given Number, the Sum (if a greater is ſought) or the Difference (if a leſſer) is the Number ſought. *Example*, If 12 be given, and a

Number be ſought, whoſe *Arithmetical Ratio* to it ſhall be 5; it is either 19 or 7.

3d, Numbers may be compared with reſpect to (or in order to find) *how oft*, One, *viz.* the *Antecedent* contains, or is contain'd in another, *viz.* the *Conſequent*; which is plainly obtain'd by dividing the greater by the leſſer; the *Quote* is called the Geometrical Ratio of the Numbers compared, (or ſimply the *Ratio*, as this Word is to be underſtood in all that follows, when it is not expreſly called *Arithmetical Ratio*): So 3 is the *Ratio* betwixt 15 and 5, ſignifying that 15 the *Antecedent*, contains 5 the *Conſequent*, 3 Times; or that 5 the *Antecedent*, is contained in 15 the *Conſequent*, 3 Times: So that whether the greater be compared (*i. e.* made *antecedent*) to the leſſer, or *this* to *that*; the *Ratio* is the ſame, and the ſame way found; ſignifying that the greater contains, or the leſſer is contain'd in, the other, ſo many Times, and Parts of a Time, as the *Quote* expreſſes: For, if the *Diviſion* is imperfect, the *Quote* is mixt; thus the *Ratio* of 17 to 5, is 3 and $\frac{2}{5}$ Parts, ſignifying that 17 contains 5, 3 Times, and $\frac{2}{5}$ Parts of a Time, *i. e.* that it contains 3 Times 5, and $\frac{2}{5}$ Parts of 5, (or 2). And reciprocally, that 5 is contain'd in 17, 3 Times and $\frac{2}{5}$ Parts of a Time, according as was explain'd upon *Diviſion*.

Consequence, From this *Definition*, we have a plain *Rule*, whereby to find a Number in a given *Ratio* to another given *Number*, which is in two *Caſes*, *viz.* 1*mo*, If the greater Term is ſought, multiply the given *Term* by the given *Ratio*, the *Product* is the Number required. But 2*do*, If the leſſer is ſought, divide the given *Term* by the given *Ratio*, the *Quote* is the Thing demanded: If the *Ratio* is a mixt Number of *Integer* and *Fraction*, then the propos'd Multiplication and Diviſion depends upon the proper *Rules for Fractions*; yet that theſe *Operations* are to be uſed, is enough to ſee in this Place.

Obſerve, I have defined *Geometrical Ratio* to be, the *Quote* of the greater *Term* divided by the leſſer; and this is very agreeable to the Senſe of that Demand, *viz.* How oft the one contains, or is contain'd in the other? But if we conſider, that the Number which expreſſes how oft one Number is contain'd in another, does alſo denominate what Part of the Greater the Leſſer is equal to, as 5 is contain'd 3 Times in 15, or is a 3d Part of it: Therefore, when the Leſſer is made *antecedent*, if the Demand be, to know what Part of the *Conſequent* it is equal to? We find the *Quote* as before, and ſet 1 fractionally over it thus $\frac{1}{3}$, and this *Fraction* is then called the *Ratio* of 5 to 15: But if the *Antecedent* is not an aliquot Part of the *Conſequent*, the *Quote* is mixt, and cannot denominate a Part. Therefore in ſuch Caſes to expreſs the *Ratio*, agreeable to this Senſe of the Queſtion, we ſet the *Antecedent* fractionally over the *Conſequent*; thus, the *Ratio* of 5 to 17 is $\frac{5}{17}$ Parts, ſignifying that 5 is 5, 17 Parts of 17, and this will hold univerſally in all Caſes; becauſe every Number has as many *Parts*, as it has *Units*, and every leſſer Number contains as many of theſe Parts, as it has *Units*: According to this then, the *Ratio* of two Numbers, is always the *Quote* of the *Antecedent* divided by the *Conſequent*; which, if the *Antecedent* is leaſt, is always a *Fraction* made of the *Antecedent*, ſet over the *Conſequent*. But ſince the Thing is the ſame in Effect which way you take it,— I ſpeak of it hereafter, as

the

the *Quote* of the Greater divided by the Leſſer; which being always a *whole Number* or *mixt*, the Effect of multiplying or dividing thereby, is more intelligible (in this Place) than by a *ſimple Fraction*, tho when we have explain'd the *Nature of Fractions* it will be as eaſy. I ſhall but make one Remark more here, *viz.* That, taking *Ratio* univerſally for the *Quote* of the *Antecedent* divided by the *Conſequent*, if the *Ratio* is a *whole* or *mixt Number*, the *Antecedent* muſt be greateſt, and the *Conſequent* found by dividing the given *Antecedent*; and contrarily to find the *Antecedent*, you muſt multiply the given *Conſequent*, which is the ſame *Rule* given in the preceeding *Conſequence*. —— But if the *Ratio* is a *Fraction* it ſhews the *Antecedent* is leaſt, and therefore the *Conſequent* is found by dividing the given *Antecedent*; and contrarily, the *Antecedent* is found by multiplying the given *Conſequent*; which will ſeem odd, until we come to explain the *Nature of Fractions*, that *Diviſion* ſhould encreaſe, and *Multiplication* decreaſe any Number. And for this Reaſon, I have defined the *Ratio* the other Way, where it is always *Whole* or *Mixt*; and does not determine whether the *Antecedent* is greateſt or leaſt, (as in the other Way) but ſuppoſing either, the *Rule* in the preceeding *Conſequence* is plain and intelligible.

4th, When three or more Numbers are compared together by two and two; (in all of which the *Antecedents* muſt be like, *i. e.* either all greater or all leſſer than their *Conſequents*) if the Differences or *Ratio's* are all equal, theſe Numbers are ſaid to be in *Proportion*; and in making this *Compariſon*, the Numbers are ſet down in a Rank, the 1ſt on the left Hand, is the 1ſt *Antecedent*, and the *Term* next it, its *Conſequent* as below; and we read the *Proportionality* thus, *viz.* as one *Antecedent* is to its *Conſequent*, (*i. e.* as much as it exceeds, or is exceeded by, or as oft as it contains, or is contain'd in its *Conſequent*,) ſo are the other *Antecedents* to their *Conſequents*. An Equality of Differences maketh *Arithmetical Proportion*, ſo theſe are *Proportional*, 1, 2, 3; becauſe the Difference of 1 and 2, is equal to that of 2 and 3. An Equality of *Ratio's* makes *Geometrical Proportion*; ſo theſe are *Proportional*, 16, 8, 4, becauſe 16 contains 8 as oft as 8 does 4. We ſee then a notable Difference betwixt *Ratio* and *Proportion*; two Numbers will conſtitute a *Ratio*, but there muſt be at leaſt Three to conſtitute *Proportion*; tho frequently *Proportion* is uſed for *Ratio*.

5th, Proportion is either, 1*mo*, *Continued*, when of a Rank of Numbers, there is the ſame *Difference* or *Ratio* of the 1ſt to the 2d, as of the 2d to the 3d, and of the 3d to the 4th, and ſo on. So that every *Term* in the *Rank*, may be taken both for an *Antecedent* and a *Conſequent*; except the 1ſt, which can only be an *Antecedent*, and the laſt which is only a *Conſequent*. Example of *Arithmetical Proportion*, 2, 4, 6, 8, 10, *&c.* Of *Geometrical Proportion*, 2, 4, 8, 16, 32, *&c.* Such Ranks are ordinarly called *Progreſſions*, which may be continued to any Length, having the two 1ſt *Terms*, by *Conſequences* to *Definition* 1ſt and 2d. Or 2*do*, *Propotion* is *interrupted*, when there is not the ſame *Difference* or *Ratio*, of each *Term* in the *Rank* to its next. As in theſe *Arithmetical Proportionals*, 1, 2, 5, 6. there is the ſame Difference of 1, 2, as of 5, 6. but not the ſame of 2, 5. And in theſe *Geometrical Proportionals*, 6. 2. : : 12. 4. as oft as 6 contains 2, ſo oft does 12, 4. But there is not the ſame *Ratio* of 2 to 12.

Conſe-

Consequence, From this *Definition*, it manifeſtly follows, that if three Numbers have not their Difference or *Ratio* continued, they cannot be called *Proportionals*; for there is no Equality to conſtitute the Proportion, ſo 1, 2, 5, are neither Arithmetically nor Geometrically proportional. Again, if there are four Numbers with an interrupted Proportion, the Interruption muſt be betwixt the 2d and 3d; that is, the 1ſt and 2d muſt have the ſame Difference or *Ratio*, as the 3d and 4th; for if 3 of them are continued, unleſs the 4th be ſo too 'tis caſt out.

6. Some are pleaſed, to make a Diſtinction of Proportion into *direct* and *reciprocal*; thus, when of 4 Numbers that are interruptedly Proportionals, both Antecedents are greater, or both leſſer than their *Conſequents*; theſe are *direct*, as 3, 6 :: 4, 8. but if the 4th Term is to the 1ſt, as the 2d to the 3d, they are *reciprocal*, as 6, 4 :: 8, 3. But how eaſy is it to perceive, that there is nothing here but a diſplacing the 1ſt Term of the direct Rank, and making it the 4th Term; ſo that to find a 4th Term in reciprocal Proportion to theſe, 6, 4, 8. is but to reverſe them, and find a 4th in direct Proportion to theſe, 8, 4, 6. yet becauſe there are ſome practical Queſtions to be ſeen in the Application of *Proportion*, which will appear in this Manner, the Diſtinction is to be minded: But in all the following Propoſitions, underſtand always direct Proportion, unleſs the contrary be ſaid.

7. When the *Antecedents* are greater than their *Conſequents*, the Proportion is ſaid to be *decreaſing*, as 6, 2, 9, 3. otherwiſe it is *encreaſing* 2, 3, 6, 9.

Obſerve, From *Definition* 2d and 3d, we have plain Rules for finding, whether any propoſed Rank of Numbers are proportional, by finding the Difference or *Ratio* betwixt each Antecedent, and its Conſequent, by *Subſtraction* or *Diviſion*; as to the firſt 'tis eaſy; as to the laſt, if there be Remainders of the Diviſions, in ſuch Caſe, we cannot (by any Rule already given) know whether theſe *Fractions*, that the Remainders make in the *Quote*, are equal; nor conſequently, whether the *Ratios* are equal, *i. e.* whether the Numbers are proportional; as it occurs in this Caſe, 8, 6 :: 4, 3. for 8 contains 6, $1\frac{2}{3}$ Parts of a Time, and 4 does 3, $1\frac{1}{2}$; and tho' it be viſible in this eaſy Caſe, it will not be ſo in every one; yet this is no Hindrance to our proceeding, for upon a bare Suppoſition of this Equality, the Nature of Proportion can be made clear, and we ſhall ſoon ſee another Rule, for examining the Proportionality of Numbers, drawn from the general Nature of the Thing.

From theſe Things, thus explained, I ſhall advance and demonſtrate, the chief Properties of *Arithmetical* and *Geometrical Proportion*.

§ II. *Arithmetical Proportion.*

Propoſition, 1*ſt*, If three Numbers are in *Arithmetical Proportion*, the Sum of the Extremes is equal to double the middle Term; and ſo whatever three Numbers have this Property, they are in *Arithmetical Proportion*. *Example*, 2, 4, 6. here 2 and 6 is 8, equal to twice 4, but 'tis true in all Caſes.

Demonſtra-

Demonſtration, By the Nature of this Kind, (*V. Definition* 5th) when the Proportion encreaſes, the 2d Term is equal to the Sum of the 1ſt, and the Difference; and the 3d Term equal to the Sum of the 2d, and the ſame Difference; *i. e.* equal to the 1ſt Term, and twice the Difference: Therefore, if the 1ſt and 3d be added, the Sum is equal to twice the 1ſt Term, and twice the Difference; but the 2d Term being equal to the 1ſt Term and Difference, double that is equal to the Sum of the Extremes, becauſe compoſed of the ſame Parts. If the Proportion decreaſe, 'tis but taking it reverſely; or take the whole Demonſtration ſhorter thus, as much as the greateſt Extreme exceeds the middle Term, ſo much does the leſſer Term want of it; from whence the Propoſition is evident, for both encreaſing and decreaſing Proportion.

Consequence, Having two Terms, to find a 3d in *Arithmetical Proportion*; if the two given Terms are the Extremes, then we muſt take the Half of their Sum for the middle Term ſought; but if one of the Extremes is ſought, then we muſt double that which is deſigned for the middle Term, and from the ſaid Double, ſubſtract the other Extreme given, the Remainder is the Extreme ſought.

Propoſition 2d, If four Numbers are in *Arithmetical Proportion*, whether continued or interrupted; the Sum of the two Extremes is equal to the Sum of the two middle Terms: And therefore four Numbers with this Property, are Arithmetically proportional. *Example*, 2, 3, 5, 6. here 2 and 6 is equal to 5 and 3, but 'tis true in all Caſes from the following

Demonſtration, When the Proportion encreaſes, the 4th Term is always equal to the 3d Term, and the common Difference; hence the Sum of the Extremes is equal to the 1ſt Term, 3d Term and Difference, but the 2d Term is the Sum of the 1ſt Term and Difference; therefore the Sum of the 2d and and 3d, *i. e.* of the two middle Terms, is equal to the 1ſt Term, Difference and the 3d Term, which are alſo the conſtituent Parts of the Sum of the Extremes; the Propoſition is therefore true in all Caſes: If the Terms decreaſe, 'tis but taking them reverſely. Or take the whole *Demonſtration* thus, as much as the greateſt Extreme exceeds the middle Term next it, ſo much does the leaſt Extreme want of the middle Term next it; whence the *Propoſition* is manifeſt.

Consequence, Having three Terms to find a 4th in *Arithmetical Proportion*, if you have the two middle Terms, and one Extreme, then, add theſe middle Terms, and from the Sum ſubſtract the Extreme given, the Remainder is the Extreme ſought; and if the two Extremes, and one middle Term is given, add the Extreme, and ſubſtract the given middle Term, the Remainder is the other middle Term.

Propoſition 3d, In an *Arithmetical Progreſſion*, (*V. Definition* 5th) the Sum of the Extremes is equal to the Sum of any two Terms, at equal Diſtance from them; or to double the middle Term (if the Number of Terms are odd;) conſequently all theſe Sums are equal among themſelves.

Demonſtration, This is all plain from the laſt *Propoſition*, and the very Nature of this Kind of *Proportion*; for any Term at a certain Diſtance from the greateſt

greateſt Extreme, is as much ſhort of it, as another Term, at like Diſtance from the leaſt Extreme, exceeds it; ſo that the Terms thus ſummed, conſidered by themſelves, are the ſame, as the three and four Terms compared in *Propoſition* 1ſt and 2d; you may ſee it in this *Series*, 2, 4, 6, 8, 10, 12, 14. where 2 and 14, 4 and 12, 6 and 10, twice 8, are all equal.

CONSEQUENCE. From this *Propoſition*, it follows clearly, that the Sum of all the Terms of an *Arithmetical Progreſſion*, is equal to the Sum of the Extremes multiplied by half the Number of Terms; but if that Number is odd, multiply the foreſaid Sum, by that whole Number; and half the Product is the Sum ſought. *Example*, 1, 2, 3, 4, 5, 6. the Sum is, 1 and 6, *viz.* 7 multiplied by 3 (the half Number of Terms) which makes 21. Again, take this *Example*, 1, 3, 5, 7, 9. the Sum is 1 and 9, *viz.* 10 multiplied by 5 (the Number of Terms) the Product 50 halved is 25, the Sum ſought; ſo that having the two Extremes, and the Number of Terms, you may eaſily find the Sum.

AGAIN, having the two Extremes (or any other two Terms) of an *Arithmetical Progreſſion*, *&c.* and another Term at a certain Diſtance from one of them, we may find a 4th Term at the like Diſtance from the other, by *Conſequence* to *Propoſition* 2d; alſo from the two Extremes known we may find the middle Term, by *Conſequence* to *Propoſition* 1ſt.

Propoſition 4th, IN every *Arithmetical Progreſſion*, any greater Term, is always equal to the Sum of the leaſt Term, and the common Difference multiplied into the Number of Terms (leſs one) in the Series from the leaſt to that greater, as in this Rank 2, 4, 6, 8, 10, 12; 12 is equal to the Term 2, together with the common Difference 2, taken 5 times, or multiplied by 5, which is the Number of Terms, (leſs one) from 2 to 12, this Propoſition is clear from the Definition of *Arithmetical Progreſſion*; for the leaſt Term and the Difference make the next greateſt, and ſo on continually adding the Difference, and therefore when you ſtop at any greater, you have taken or added the Difference as oft, as there are Terms, except the leaſt, which being at the firſt added, the *Propoſition* is clear. So that having the leaſt Term and common Difference of any *Arithmetical Progreſſion*, we can eaſily find any Term at a given Diſtance from that leaſt Term.

Propoſition 5th, IN every *Arithmetical Progreſſion*, the leaſt Term is always equal to the Difference of any greater Term, and the Product of the common Difference, into the Number of Terms (leſs one) betwixt the ſaid leaſt, and that greater. This is plainly the Reverſe of the laſt Propoſition, and needs no Demonſtration. In *Example* of *Proportion* 5th, the Term 2, is equal to 12 leſſened by 10, which is the Product of the common Difference 2, multiplied into 5 the Number of Terms (leſs one) from 2 to 12.——ſo that, having any greater Term, and the common Difference, we may find any leſſer Term at any given Diſtance from that greater Term.

Propoſition 6th THE common Difference of a Rank in *Arithmetical Progreſſion*, is always equal to the Difference of any given Term in the Series, and the leaſt Term, divided by the Number of Terms (leſs one) from the ſaid Term, to the leaſt; this is plain from *Propoſition* 4th, for ſince that given Term is equal

qual to the Sum of the leaſt Term, and the Product of the common Difference multiplied by the Number of Terms (leſs one) from the ſaid given Term to the leaſt Term; therefore if from that Sum (*i. e.* the given Term in this *Propoſition*) you ſubſtract the leaſt Term, there will remain the ſaid Product of the common Difference and Number of Terms (leſs one), which divided by the ſaid Number of Terms (leſs one) the Quote is the common Difference ſought, which therefore we can find, having the leaſt Term and any other Term, together with the Number of Terms contained betwixt them. *Example*, in this Rank 3, 6, 9, 12, 15. the common Difference 3, is equal to 6 (the Difference of any Term, as 9, and the leaſt Term 3,) divided by 2, the Number of Terms (leſs one) from 3 to 9.

Propoſ. 7th, In any *Arithmetical Progreſſion*, the Number of Terms (leſs one) is always equal to the Difference of the greateſt and leaſt Term, divided by the common Difference, this is plainly the Converſe of the laſt *Propoſition*; for there, the Difference of any Term and the leaſt, divided by the Number of Terms, *&c.* quoted the common Difference: Therefore from the *Nature* of *Diviſion*, the ſame Difference of the greateſt and leaſt Term, divided by the common Difference, muſt quote the ſaid Number of Terms, leſs one: So that having any two Terms of an *Arithmetical Progreſſion* and the common Difference, we can find the Number of Terms contained betwixt theſe two given Terms; for this *Propoſition* ſhews how to find that Number *leſs one*: Therefore to this add 1.

Example, In this Series, 2, 5, 8, 11, 14, 17. the Number of Terms *leſs one*, is 5, equal to 15, (the Difference of the greateſt, and the leaſt 2) divided by 3, (the common Difference;) therefore to this add 5 and one, we have the whole Number of Terms in the Rank, equal to 6.

Obſerve, These are the chief Properties of *Arithmetical Proportionals*, the *Rationale* of which I have ſhown in a plain Method of Demonſtration, from no other Principles, than the bare *Definitions* of *Arithmetical Proportion*: But there are many more Queſtions about finding the greateſt Term, the leaſt Term, the common Difference, the Number of Terms, and Sum of an *Arithmetical Progreſſion*.

For if any three of theſe Things are known, the other two may be found; but where the Rules for any of theſe are deduced from *Algebra*, I have touched none of theſe Queſtions: What I have advanced is eaſy and plain, and contains the *fundamental Properties* and *Rules* of this Kind of *Proportion*.

Neither have I made a Collection of *practical Queſtions*, that are ſolved by the *Propoſitions* here demonſtrated, becauſe theſe and many others are to be found in moſt *Arithmetick Books*, (particularly Mr. *Hill*'s) tho' without any Reaſon or Demonſtration; beſides they are of no great Occurence in real Buſineſs (yet 'tis very neceſſar for the Sake of *Arithmetick* in general, to know what I have here explained) and when they occur, I may reaſonably ſuppoſe, that any Body who underſtands what I have here taught, and takes up the Senſe of the Queſtion, will eaſily ſee to which of the forementioned *Propoſitions* the Queſtion is reduceable, or whether they belong to any of them: I ſhall

therefore make but one ſingle Queſtion, *viz.* if a Debt is to be paid at 7 ſeveral Payments, 4 *l.* at the 1ſt Payment, and 18 *l.* at the laſt, every Payment to exceed another continually by an equal Difference, what is the whole Debt? And what is every other ſingle Payment?

By Conſequence to *Propoſition* 3d, you'll find the total Debt 77 *l.* and by *Propoſition* 6th, the common Difference is, 2 *l.* 6 *s.* 8 *d.* which being added continually to 4 *l.* (the 1ſt Payment) we have all the Payments, which are theſe, 4 *l.* — 6 *l.* 6 *s.* 8 *d.* — 8 *l.* 13 *s.* 4 *d.* — 11 *l.* — 13 *l.* 06 *s.* 08 *d.* — 15 *l.* 13 *s.* 4 *d.* — 18 *l.* the Sum of all which is, 77 *l.*

Out of this Queſtion may any other be form'd, belonging to *Arithmetical Progreſſion.*

All the *Remark*, I have further to make, is, That in *practical Queſtions* you be ſure to make all the given *Numbers* of one Denomination by *Reduction*; and then what *Multiplication* or *Diviſion* is required, will be eaſily performed.

§ III. *Geometrical Proportion.*

Propoſition 1ſt. If to two Numbers in a certain *Ratio*, be added other two in the ſame *Ratio* (the leſſer to the leſſer, and greater to the greater) and to their Sum again (if you pleaſe) other two, in the ſame *Ratio*, and ſo on, the Sums are ſtill in that ſame *Ratio*; becauſe they are nothing elſe, but all the Parts; which being equal in *Number*, are reſpectively in the ſame *Ratio*. *Example*, if 3. 4. have the ſame *Ratio* as 6. 8. I ſay, 9. 12. (the Sum of 6 and 3, 8 and 4) will have the ſame *Ratio*, *i. e.* by *Definition* of *Proportion*, they are proportional.

Conſequence 1. Hence it follows, that if any two *Numbers* are equally multiplied, the *Products* are in the ſame *Ratio*, with the ſaid *Multiplicands*; for they are made up of an *equal Number* of *Parts*, reſpectively in the ſame *Ratio*. *Example*, 3. 5. are proportional with 15. 25. which are 3 and 5, multiplied by 5.

2. It follows, that if two *Numbers* are equally divided, the *Quotes* retain the ſame *Ratio*; for this is only the Reverſe of the former, and it is plain from *Diviſion*; for the ſame *Quotes* by an equal *Multiplication*, produce the ſame *Dividend*; this in other Words is plainly, that all *Numbers* conſidered as Wholes, are proportional to their like *Parts*. *Example* 24. 18. are propottional to 8. 6. which are the 3d Parts of the other.

3. It is plain alſo, that if from two *Numbers* in a certain *Ratio*, be taken away two like Parts, *i. e.* which are in the ſame *Ratio* with the Wholes, the Remainders will be in the ſame *Ratio*; becauſe the Parts taken away, with theſe Remainders, make up the Wholes; and theſe Parts taken being proportional to the Wholes, it is impoſſible the Remainders can be in any other *Ratio*; for they muſt be in the *Ratio* with the Parts taken away, in order to make up Wholes in the ſame *Ratio*, by *Propoſition* 1ſt. *Example*, from 24. 18. take 8. 6. in the ſame *Ratio* the Remainders 16. 12. are in the ſame *Ratio*. From theſe Remainders take again other two like Parts, and ſo on; all theſe Remainders are ſtill in the ſame *Ratio*, or proportional to the 1ſt *Numbers*,

ters, (and so to all the other Remainders, and Parts taken away); because they are so to their immediate Wholes (*i. e.* the last Remainders) which are proportional to the said 1st *Numbers*. *Example,* from the last Remainders of the foresaid *Example, viz.* from 16. 12, take 4. 3, in the same *Ratio,* the Remains 12. 9, still in the same *Ratio.*

4. FROM what has been explained of *Proportion,* it is evident, That all simple Questions of *Multiplication* and *Division* may be reduced to *Proportion*; thus, in *Multiplication, Unity* is to either the *Multiplicand* or *Multiplier,* as the other is to the Product: In *Division,* the *Dividend* is to either the *Divisor* or *Quote,* as the other is to *Unity*; but you'll see this further appear from another Consideration below at *Proposition* 3d.

Proposition 2d, IF there are three Numbers in *Geometrical Proportion,* the Product of the Extremes (multiplied together) is equal to the Square of the middle Term (*i. e.* to the Product of the middle Term multiplied by its self.) *Example,* 3. 6. 12.——3 by 12 is 36, equal to 6 by 6.——Therefore, any three Numbers with this Property, are *Geometrically proportional.*

Demonstration, FROM the Nature of *Multiplication,* all Products made by the continual *Multiplication* of the same Numbers, in whatever Order these *Multipliers* are taken, are equal; but here, the greatest Extreme is the Product of the middle Term and the *Ratio,* therefore the Product of the Extremes will always be the Product of the middle Term, the *Ratio,* and the least Term continually: Again, the middle Term is the Product of the least Term and *Ratio*; and if multiplied into it self, that Product (or Sqare) is equal to the Product of the least Term, the *Ratio* and middle Term continually, equal to the Product of the Extremes; therefore the *Proposition* is true.

CONSEQUENCE, Having two Terms, (*viz.* one Extreme and the middle Term) we may find a Third, (*viz.* the other Extreme) in *Geometrical Proportion,* if we square any of the given ones (as the middle Term) and divide the Product by the other. This follows from the Nature of *Multiplication* and *Division,* compared with this *Proposition* 2d: And to the last two, we can again find a 3d, and so compleat a *Series* or *Rank* in *Progression* to any Length.

Proposition 3d, IF four Numbers are in *Geometrical Proportion,* (whether continued or interrupted) the Product of the two Extremes is equal to the Product of the two middle Terms; Thus, in these 3. 6. 4. 8, 3 by 8 produces 24, equal to 6 by 4. Therefore any four Numbers with this Property, are *Geometrically proportional.*

Demonstration, THE greatest Extreme is (by Consequence to *Definition* 2d) equal to the Product of the *Ratio,* multiplied into the middle Term next it. Therefore, the Product of the Extremes, is equal to the Product made by the *continual Multiplication* of the lesser Extreme, the *Ratio,* and the middle Term next to the greatest Extreme. But the Product of the two middle Terms is made, by the same Numbers continually multiplied; since the middle Term next the lesser Extreme, is the Product of the said lesser Extreme and the *Ratio*; therefore the *Proposition* is true.

CONSEQUENCE, if any three Numbers (*viz.* one Extreme and two middle Terms) are given, we may find a 4th in *Geometrical Proportion,* if we multiply

the 2d and 3d Term (*i. e.* The two middle Terms) and divide the Product by the 1st, the *Quote* is the 4th ſought, from the Nature of *Multiplication* and *Diviſion* compared with this *Propoſition* 3d. *Example*, to theſe 2. 4. 6. find a 4th, it is 12, for 4 by 6 produces 24, which divided by 2 *Quotes* 12.

If a reciprocal 4th (*V. Definition* 5th) is required, it is plain, we muſt multiply the 1ſt and 2d, and divide the Product by the 3d; *i. e.* we reverſe the Terms, and find a 4th in direct Proportion; thus, to theſe 6. 4. 2. a 4th reciprocal is 12, which is direct to 2, 4, 6.

Consequence 2d, If four Numbers are *Geometrically proportional*, they will be ſo. 1*mo*, Inverſely thus, if theſe are proportional 3. 6. 4. 8. ſo are they taken thus, 8. 4. 6. 3. for the Extremes and Means are the ſame, whoſe Products are demonſtrate to be equal. 2*do*, They will be proportional Alternatly, *i. e.* comparing the 1ſt Term to the 3d, and the 2d to the 4th; ſo the former *Example* will alſo be proportional, if compared thus, 3. 4 : : 6. 8. and this again Inverſely, 8. 6 : : 4. 3. for ſtill the Extremes and middle Terms are the ſame.

Propoſition 4th, If four (or more) Numbers are in *Geometrical Proportion*; the Sum of all the *Antecedents* is to the Sum of all the *Conſequents*, in the ſame *Ratio*, as any one of theſe *Antecedents* is to its *Conſequent*. *Example*, If it be as 3 to 8, ſo 6 to 16, it will alſo be as 3 and 6 to 8 and 16, ſo 3 to 8; that is, 9. 24 : : 3. 8, are *Geometrically proportional*; the *Demonſtration* of this is contained in *Propoſition* 1ſt; for the Sum of the *Antecedents*, and the Sum of the *Conſequents* are as the *Wholes*, which have equal Numbers of Parts reſpectively, in the ſame *Ratio* by the *Suppoſition*.

Consequence, If four Numbers are *Geometrically proportional*, the Sum of one *Antecedent* and its *Conſequent*, is to the Sum of the other *Antecedent* and its *Conſequent*, as one *Antecedent* to its *Conſequent*; in the foreſaid *Example*, I ſay, ſince 3. 8 : : 6. 16, therefore 3 and 8. 6 and 16. as 3. 8, or 6. 16. For if you put the Example *alternately* thus, 3, 6 : : 8, 16 (according to *Conſequence* 2d of *Propoſition* 3d) then this *Conſequence* falls in with the *Propoſition* 4th.

All theſe hold Inverſely and Alternatly, by *Propoſition* 3d, *Conſequence* 2d.

Propoſition 5th, If four Numbers are *Geometrically proportional*, the Difference of the *Antecedents*, is to the Difference of the *Conſequents*, in the ſame *Ratio*, as one of the *Antecedents* to its *Conſequent*. *Example*, let it be 4, 9 : : 12, 27. proportional; I ſay it will be, as the Difference of 12 and 4, to the Difference of 27 and 9, ſo is 4. 9. or 12. 27; that is, 8, 18 : : 4, 9, (or 12. 27) are *Geometrically proportional*.

The *Demonſtration* of this comes alſo from *Propoſition* 1ſt, compared with the 4th; for the Sum of the *Antecedents*, is to the Sum of the *Conſequents*, as one *Antecedent* to its *Conſequent* by *Propoſition* 4th; but by *Conſequence* 3d to *Propoſition* 1ſt, if the Parts taken away are as the *Wholes*, the *Remainders* are alſo as theſe *Wholes*, (*i. e.* proportional with them) or which is the ſame, as the Parts taken away; wherefore this *Propoſition* is true.

Consequence, It follows then, That the Difference of one *Antecedent* and its *Conſequent*, is to the Difference of the other *Antecedent* and its *Conſequent*, as

the

the one *Antecedent* or *Conſequent* is to the other; this is clear, by ſetting the *Example alternately*, and then applying *Propoſition* 5th; ſo, becauſe 4. 9 :: 12. 27. and alſo *alternately* 4, 12 :: 9, 27. therefore by this *Propoſition* 5th, 12 leſs 4, is to 27 leſs 9, as 4. 9. or 12. 27. that is, 8, 18 :: 4, 9, (or 12. 27) are proportional.

All theſe hold **Inverſely** and **Alternately**.

Propoſition 6th, In any *Geometrical Progreſſion*, the Product of the two Extremes, and the Products of every two Terms equally diſtant from theſe Extremes, alſo the Square of the middle Term (if the Number of Terms is odd) are all equal. *Example*, in this Rank, 2, 4, 8, 16, 32, 64, 128, &c. I ſay, if 128 is multiplied by 2, 64 by 4, 32 by 8, and 16 by 16, the Products are all equal, *viz.* 256. The Reaſon is plain; for, every Term, at a certain Diſtance from the greateſt Extreme is as oft contained in it; as another Term at like Diſtance from the leſſer Extreme, contains it, and therefore the Senſe of this *Propoſition* is the ſame with the 2d and 3d preceeding.

Obſerve, I have here advanc'd and demonſtrated the fundamental Properties, and chief Ways of arguing with *Geometrical Proportionals*: But I muſt tell you, the *Doctrine of Proportion* contains a vaſt deal more than what's here; it is a large and noble Subject; the Inſtrument by which we enquire further into the *Nature of Numbers*, and apply the fundamental *Operations of Arithmetick* to all Manner of Buſineſs. I deſign'd this indeed for a *Regular Piece of Arithmetick*, (but not to contain every Thing.) my Appology for carrying you no further into the *Theory of Proportion*, is, that what I have delivered is ſufficient for giving the *Rationale* of all the *practical Parts of Arithmetick*, to which I ſhall apply *Proportion*, and which are of the moſt frequent Occurrence in Buſineſs. Beſides, what you have here, contains the *Foundations* of all; the right conceiving of which, will fit any Body for an eaſy Acquiſition of the Reſt, when they meet with proper Aſſiſtance: For you muſt know that, whatever more might have been done in the Method I have taken, yet the remaining *Theory of Proportion*, is to be obtain'd with incredible more Eaſe, (and many Things no other Way, than) by Help of what is called **Univerſal Arithmetick** or **Algebra**. And ſince I have named it, tho' my Deſign allows me to give you no further Account of it here, yet I would adviſe every one who would be a perfect *Arithmetician*, to know ſomething of it; there are, indeed, very great Depths in this Science; but for obtaining the End I have now ſet in your View, *viz.* a full and true Knowledge of *Arithmetick* or *Numbers*, in order to the more certain and complete Application thereof, in any Kind of Buſineſs that may occur, I can give you this Encouragement, that the *Algebra* required thereto, may be very ſoon and eaſily got; and then you can't imagine what Pleaſure your Practice in *Arithmetick* will afford: And it muſt neceſſarly provoke you, to think, there are many *Rules* in the *Practice of Arithmetick*, that as they owe themſelves to *Algebra*, ſo they can be demonſtrated no other Way: As particularly, in *Arithmetical Progreſſions*, (which I obſerv'd before) and here in *Geometrical Progreſſions*, where you have theſe five diſtinct Things, *viz.* the *leaſt Term*, the *Greateſt*, the *Ratio*, the *Number* of *Terms*, and *Sum* of *them all*; any *Three* of which being given, the other

Two

Two may be found by *Rules* raiſed from *Algebra*; and the *Application* of theſe again, in *Compound Intereſt*, and the purchaſing of *Leaſes* and *Annuities*. Of the ſame Kind alſo is the Buſineſs of extracting the *Square* and *Cube Roots*, commonly taught in Books of Arithmetick; which with all other Things that cannot be demonſtrated (or at leaſt without great Difficulty) but by *Algebra*, I have altogether omitted in this *Treatiſe*; referring thoſe who are content to practiſe, without knowing a Reaſon why, to ſuch Books as Mr. *Hill*'s *Arithmetick*, where you have a great *Collection* of *practical Rules* with their *Examples*, and as little as poſſible, *i. e.* nothing, to ſhow the *Reaſon* of any *Operation*; which it ſeems fell not within his Deſign.

HOWEVER, before I leave this, I ſhall ſhow how ſome *Queſtions* of *Geometrical Progreſſions* may be ſolv'd, upon the preceeding *Principles*.

Caſe 1ſt, If in any *Geometrical Progreſſion*, we know the 1ſt *Term* and the *Ratio*, (*Conſequence* to *Propoſition* 2d) 'tis plain we may continue the *Series* by *Multiplication* and *Diviſion*, to any Number of *Terms*; and then find the Sum by *Addition*. Or the 1ſt and 2d *Terms* given, by them we can find the *Ratio*, (by *Defin.* 2d) continue the *Series*, (by *Conſeq.* to *Defin.* 2d, or *Conſeq.* to *Prop.* 2d,) and then ſumm them; which is true, is a very tedious Work, yet not to be mended; but by ſuch Rules as I cannot here demonſtrate, and ſo will not mention.

Caſe 2, IF the two *Extremes* and the *Ratio* are known, all the middle *Terms* may be found by dividing the *Greater*, or multiplying the *leſſer Extreme* continually, till the laſt *Quote* or *Product* be the other *Extreme*, as is clear from the *Defin.* 2d.

I make no *Example* of theſe, becauſe you ſee the Work in theſe *Propoſitions*, to which I refer.

§ IV. *Concerning the Application of Proportion Geometrical.*

AS *Proportion* is not a new Way of operating with *Numbers*, different from *Multiplication* and *Diviſion*; ſo in all the following practical *Rules* of *Proportion*, you'll find nothing but the *Application* of the above explain'd *Theory* of *Geometrical Proportion*, to the Nature of certain Queſtions that occur, or may be ſuppoſed in humane Affairs. But the Application is conveniently divided into various *Rules*, diſtinguiſhed by *Names* taken from the *Nature of the Queſtions*, to which it is applied; by which that Application becomes more intelligible, and eaſy; ſince we thereby ſee ſuch a Variety, and that under diſtinct Heads, as we may be ſenſible what Difference in the *Application*, the Circumſtances of different Kinds of Queſtions require, and thence be in a Capacity to apply it any other Way; for there is not here all the poſſible Application of it. But it is reaſonably ſuppoſed, whoever underſtands what is here, (which are the principal and more general Heads) can never be ſtraitned with any Queſtion that depends on the Principles delivered above; (for I always except ſuch Practices where the Rules have been gain'd by *Algebra*) I proceed to the particular Rules.——

CHAP.

CHAP. VII.

RULE *of* THREE, *or the* GOLDEN RULE, *as it is called for its great Uſefulneſs.*

§ I. *Contains the Rule.*

THIS firſt Rule is the moſt general, and comprehends in a Manner all the Reſt; and is it ſelf the immediate Application of *Propoſition* 3d and its *Conſequence*.

'TIS called the Rule of Three, becauſe all *Queſtions* that fall under it, have *Three Numbers (ſimple* or *mixt)* given, to find a *Fourth*, (which ſhall have ſuch *Proportion* to *one* of the *three given*, as the remaining *two* have one to the other;) the great Matter then, is, how to order the *Numbers of the Queſtion*, ſo as the State of the Proportion may be clear; after which the *Anſwer* is eaſily found. For all which take this *practical Rule*, *viz.* repeat the *Queſtion* attentively. Then, 1*mo*, If you find four diſtinct *Numbers given*, there is *one* of them ſuperfluous, as to the Proportion for finding the *Anſwer*; and it is that *one* which is repeated, either expreſly, or by ſome *Particle* as, *it*, *them*, *&c.* and ſometimes you have only the Senſe of the Queſtion to diſcover this by; and the other *three* are your *Terms*; which you muſt ſtate thus, *viz.*

2*do*, SEE what Kind of Thing is ſought, (*i. e.* what the *Number* ſought ſignifies; for this the *Queſtion* muſt ſhew) there is a known *Number* always in the *Queſtion* of the ſame Signification, ſet it in the middle Place of the *Three*, then take the known *Number* upon which the Anſwer depends, or to which it immediately belongs (and you will always find it immediately after the interrogative Words, *What? How much? How many? &c.* The ſuperfluous *Number* being already rejected) ſet this on the right Hand, and the remaining *Number* (which will be always of the ſame Signification) ſet on the left Hand: So that in a Caſe truly ſtated, the middle *Term* is like the Thing ſought; the two *Extremes*, are like other; and to that on the right Hand, the Anſwer immediately relates: And *obſerve*, if all the *Numbers* in the *Queſtion* ſignify the ſame Kind of Thing in general, for *Example*, *Money*, *&c.* then you'll find ſome other *Diſtinction*, ſuch as *principal Sum* and *Intereſt*, which muſt be regarded in ſtating the three *Terms*: Having the *Terms* thus ſtated, 3*tio*, Reduce the

mixt

mixt Numbers to the *lowest Denomination* expreſt, and the *Extremes* muſt always be reduced to the ſame Name, if any one of them or both be mixt; but if only the middle *Term* be mixt, reduce it alone, and the *Terms* being (or now made) all *ſimple Numbers*, work with them, for the *Anſwer*. Thus, 420, form the *Queſtion* upon theſe three *ſimple Numbers* ſtated, by expreſſing the firſt two in Form of a *Suppoſition*, (and they are ordinarly propoſed ſo,) and then the third moves the *Queſtion*; you may now take in the ſuperfluous *Term*, into both *Suppoſition* and *Demand*; it will help to make the *Senſe* of the *Queſtion*, which duly conſidered, the Nature of the Thing will ſhew, whether the *Number* ſought ought to be greater or leſſer than the *middle Term*; and then, you muſt accordingly multiply that *middle Term*, by the greater or leſſer *Extreme*, and divide the *Product*, by the other *Extreme*; the *Quote* is the *Anſwer*, of the ſame *Denomination* with the *middle Term* (reduc'd, if it was ſo:) If there be any Remainder reduce it, and divide on, as directed in *Diviſion*, and you'll have the *Anſwer* in a *mixt Number*: And by this *Rule*, all *Queſtions* direct and indirect, are ſolv'd as ſhall be explained.

QUEST. 1ſt, If 3 *Yards* of *Cloth* coſt 13 *l.* what's the Value of 7 *Yards*.

QUEST. 2d, What is the Price of 14 *Ounces Suggar*, when 17 *Pound* 3 *Ounces* coſt 2 *l.* 16. *ſh.*

OPERATIONS.

QUEST. 1.

Yard *Lib.* *Yard.*

3 — 13 — 7

7

3) 91 (30

9

01 Remainder

20

3) 20 *ſh.* (6 *ſh.*

18

2 Remaind.

12

3) 24 (8 *d.*

QUEST. 2

Pound *Ounce* *Lib.* *Shil.* *Ou.*

17 03 — 2 16 — 14

16 reduce 20

105 56

17

275 *Ounce* 56 — 14

14

224

56

784

275) 784 (2 *ſh.*

550

234

12 reduce

468

234

275) 2808 (10

275

58 which tho' reduced to *Farthings* will give none.

Let the Stating and Operation of theſe be compared with the Rule.

§ III.

§ II. *To explain and give the* Rationale *of this practical Rule.*

LET us premiſe theſe two Things *viz.* 1*mo*, When *Numbers* are applied to certain Things, we can never compare two, (taking them complexly with their Denominations) that ſignify Things of ſuch different Natures, as admit of no Relation (*i. e.* where the one can in no Senſe, contain the other;) ſo we can never compare 3 Men, to 6 Horſes. 2*do*, Two *Numbers* that ſignify the ſame *Species* of one Thing, as 4 *l.* and 12 *l.* are in the ſame *Ratio*, as if they were abſolute; for the *Individuals* of each being of the ſame Value, the *Ratio* of them conſidered complexly with their Signification, can be no other than the *Ratio* of the *abſolute Numbers*; ſo 4 *l.* is as oft contained in 12 *l.* as the *abſolute Number* 4, in 12; but it will not be ſo, if they are of different *Species*, as 4 *l.* and 8 *s.* which are not as 4, to 8; but as the *ſh.* in 4 *l. viz.* 80 *s.* to 8 *s.* or as the *abſolute Number* 80, to 8. Therefore to find the *Ratio* of two *Numbers* of different *Species* of the ſame Thing, we muſt firſt reduce them to one Name, and then we may conſider them as *abſolute Numbers*, and find the *Ratio* by *Diviſion* (*V. Defin.* 3d of *Chap.* VI.)

FROM this it is plain, that if one or both of the *Numbers* are mixt, to find their *Ratio*, we muſt reduce them both to *ſimple Numbers* of one Name, and then divide, as if they were *abſolute Numbers*.

TO all this 'tis a fair *Conſequence*, that if it be propoſed to find a *Number* of any Kind of Thing (as *Money*,) which ſhall contain, or be contained in, (*i. e.* be proportioned to) a given *Number* of the ſame Kind; as another *Number* of the ſame or any other Kind of Thing, (as *Weight*,) is proportioned to a third given *Number* of this laſt Kind; I ſay, this laſt *Antecedent* and its *Conſequent* being reduced to one Name, may be looked upon in that State, as *abſolute Numbers*; and the *Queſtion* reſolves into this, *viz.* to find a *Number* of any Thing in ſuch *Proportion* to the given *Number* of that Kind, as theſe *abſolute Numbers*, are to one another: Alſo, that firſt given *Number* being ſimple (or made ſo by *Reduction*) may be looked upon as *abſolute*; and then the *Queſtion* being duly ſtated, there's nothing to be done, but find a fourth Proportional, (by *Prop.* 2d and *Conſeq.*) to which, from the Senſe of the *Queſtion*, we afterwards give its proper *Denomination*.

BY what is above ſaid, the Reaſon of that Part of the *practical Rule* for reducing the *Terms* to *ſimple Numbers*, is very clear: And for the other Parts of the *Rule*, let us examine the preceeding *Queſtions*.

THE State of the 1ſt *Queſtion* is, 3 *Yards* — 13 *l.* — 7 *Yards*; the Senſe of this Queſtion is, to find a *Number* of *Money* ſo proportioned to 13 *l.* as 7 *Yards* to 3 *Yards*; for it is plain common Senſe, that as oft as 7 *Yards* contains 3 *Yards*, ſo oft muſt its Value contain the Value of 3 *Yards* (which is 13 *Lib.*) ſo that the *Terms* might ſtand thus, as, 3 *Yards* — to 7 *Yards*, — ſo 13 *l.* — to — *Lib.* ſought; in which State, the *Antecedent* and its *Conſequent*

are of one *Nature*, as they ought to be (by Premiſe 1ſt:) for it would be plain Nonſenſe, if we read the firſt State thus, *viz.* as 3 *Yards* is in Proportion to 13 *l. &c.* for theſe can never be compared; in the other State, we may well ſay, as 3 *Yards* to 7 *Yards, &c.* But if we conſider, that according to what is ſaid in *Premiſe* 2d, all the three *Terms* being *ſimple*, and the known *Antecedent* and *Conſequent* (3 *Yards*, 7 *Yards*) of the ſame *Species*, may be all looked upon as *abſolute Numbers*; to which we are to find a fourth, which muſt be in direct *Proportion*, by the *Senſe* of the *Queſtion*: But a fourth in direct *Proportion* being found, by multiplying the 2d and 3d *Term, &c.* 'tis plain we may alternate the *Terms*, (*V. Conſeq.* 2d *Prop.* 3d) and make them ſtand thus 3, — 13, — 7; for it will be the ſame *Product*, and conſequently the ſame *Anſwer*. Therefore, the *Terms* are well ſtated by the *practical Rule*, when the *Senſe* of the *Queſtion* requires a 4th *in direct Proportion*; but it is ſo too, when the 4th is *indirect*, as in *Queſtion* 3d, which ſtands thus, 7 *Oun.* — 16 *l.* — 9 *Oun.* for it is only reverſing the *Terms*, and taking the *Extremes* on the right Hand, as the firſt; and then the 4th is directly proportional: Conſider, the *Senſe* of that *Queſtion* is no other, than to find a *Number* of *Libs* leſs than 16, in *Proportion*, as 7 *Oun.* 9 *Oun.* (for the more Weight of Bread be received for the ſame Price, the cheaper muſt the Wheat be:) So the *Terms* may ſtand thus, 9 *Oun.* — 7 *Oun.* — 16 *l.* that is, if we conſider them as *abſolute Numbers*, (becauſe they have the juſt *Conditions* required for that) they ſtand 9, — 7, — 16, or *alternately*, 9, — 16, — 7. And the 4th *in direct Proportion* being found, is the *Libs* ſought. Now the Reaſon for chooſing the *State* of the *Terms*, as in the *practical Rule* is, becauſe it affords an eaſier *Direction*; and the *Senſe* of the *Queſtion* is more obvious, by repeating the three *Terms* complexly with their Signification, according to that Order: For tho' we do not ſay, as 3 *Yards* is in Proportion to 13 *l. &c.* yet we may ſay, if 3 *Yards* coſt 13 *l.* what will 7 *Yards* coſt. By forming the *Queſtion* according to its plain Import, we will always ſee clearly, whether the 4th ſought, muſt exceed the middle *Term* or not, in order to the true *Multiplication* and *Diviſion*, for the *Anſwer*; which I ſhall in the next Place prove to be right, directed by the *general Rule* thus.

In all *Queſtions* right ſtated (and prepared by *Reduction*) according to the *Rule*, the 4th ſought, is either *direct* or *indirect*: Now in all *direct Proportion*, the *Extreme* on the right Hand is the *Multiplier* (by *Prop.* 3d *Conſeq.* 1) and by the *practical Rule*, it can never be otherwiſe; for when the 4th ſought, muſt be greater or leſſer than the middle *Term*, and the 3d *Term*, (or the *Extreme* on the right Hand) is at the ſame Time alſo greater or leſſer than the firſt *Term*, then, that *Queſtion* is direct, and by the *Rule*, the 3d *Term* is the *Multiplier*: But if the 4th ſought muſt be greater or leſſer than the Middle, and the Third be at the ſame Time leſſer or greater than the firſt; that *Queſtion* is *indirect*, and by the *Rule* the firſt *Term* is the *Multiplier*, as it ought to be by *Prop.* 3d, *Conſeq.* 1ſt.

Laſtly, As to the *Reduction* of the Remainder, the Reaſon is obvious; for tho' we find a 4th proportional, as if all were *abſolute Numbers*; yet the

Senſe

Senſe of the *Queſtion* ſhewing us, how to name the *Quote*, ſhews alſo, that the *Dividend* is of the ſame Name, *(i. e.* like the *middle Term)* ſince the *Quote* being as a *Part* of the *Dividend*, they muſt have one Name: But this is further clear hence, that tho' all the *Terms* are effectually as *abſolute Numbers*, in finding the *Number* ſought; yet, we may retain the *Denomination* of the *middle Term*, and leave the *Extremes abſolute*; for it will ſtill be very rational to multiply or divide a *Number* of any Kind of Thing, by an *abſolute Number*; and ſo the *Product (i e.* the *Dividend)* and *Quote* are like the *middle Term*, but the *Remainder* is a Part of the *Dividend*; and being leſs than the *Diviſor*, muſt neceſſarly be reduced, to find an *integral Quote* (tho' of a lower *Denomination)* which is a Part of the *Anſwer*.

THERFORE, the *Rule* is good in all its Parts, and you have *direct* and *indirect* in one, very convenient for Practice; without the needleſs Burthen of two different *Rules*. And for the Diſtinction, as to the Senſe, I have fully explained it: So that, tho' you have but one *Rule*, you may call that *direct*, when the 3d *Term* is *Multiplier*, and that *indirect*, when the firſt is *Multplier*.

FROM the *Rule* thus explained, it is manifeſt there are no ſuch Abſurdities here in multiplying or dividing, as I excepted againſt, in explaining the *Application* of *Multiplication* and *Diviſion*; for the *Terms* being prepared by *Reduction*, all are; as *pure* and *abſolute Numbers*; or the *Extremes* at leaſt, which are the *Multiplier* and *Diviſor*.

I ſhall add ſome *Queſtions* for Exerciſe in this *Rule*, and only ſtate them.

Queſtion 4th, IF 3 *Stone*, 11 *Pound Weight* of *Suggar* coſt 5 *l.* what is the Price (at that Rate) of 19 *Stone?* State *Stone Pound Lib. Stone*

3 : 11 —— 5 —— 9

Queſt. 5th, WHAT Quantity of *Cloth* will 40 *l.* 16 *ſh.* 8 *d.* purchaſe at the Rate of 2 *l.* 5 *ſh.* for 3 *Yards?* State *Lib. Shil. Yards* *l. ſh. d.*

2 : 5 —— 3 —— 40 : 16 : 8.

Queſt. 6th, WHAT is the Price of 1 *Ounce Weight* of any Thing, when 14 *Pound* coſt 7 *ſh?* State *Pound Shil. Ounce*

14 —— 7 —— 1

Queſt. 7th, IF 1 *Boll* of *Wheat* coſt 1 *l.* 15 *ſh.* What is the Worth of 3 *Chalder*, 4 *Bolls*, and 2 *Buſhels?*

State *Boll Lib. Shil. Chal. Boll. Buſh.*

1 —— 1 : 15 —— 3 : 4 : 2

Queſt. 8th, IF 13 Men ſpend 24 *l.* in 6 Days, How long will 18 *l.* ſerve them?

State *Lib. Days Lib.*

24 —— 6 —— 18

Queſt. 9th, WHAT Time will 7 Men take to do any Thing, which would ſerve 9 other ſuch Men to do in 12 Days 18 Hours?

State *Men Days Hours Men*

9 —— 12 : 18 —— 7

Queſt. 10th, How long will 8 Men take to ſpend 100 *l.* when 5 ſuch Men could do it in 20 Hours? *Men Hours Men*

State 5 —— 20 —— 8

Queſt. 11th, If 4 Horſe labour a Piece of Ground in 2 Days, What Time will they take to do 5 Times as much? *Note*, The Piece of Ground muſt be repreſented by *Unity*. State *Piece Days Piece*

1 —— 2 —— 5

Queſt. 12th, If I ride 60 [illegible] in 3 Days (riding from Sun riſing, to ſetting,) when the Day is 14 [illegible] long, what was the Length of the Day, when I travelled but 40 Miles in 3 Days? State *Miles Hours Miles*

60 —— 14 —— 40

Queſt. 13th, In what Time could I travel 50 Miles, the Day being 12 Hours long, when I made the ſame Journey in 3 Days 15 Hours, when the Day was 16 Hours long? State *Hours Days Hours Hours*

16 —— 3 : 15 —— 12

Queſt. 14th, If when *Wheat* is at 14 *l.* 10 *ſh. per Boll*, the 10 *d.* Loaf of Bread weighs 12 *Ounces*, What is *Wheat* worth, when that Loaf weighs 16 *Ounces*?

State *Ounce Lib. Shil. Ounce*

12 —— 14 : 10 —— 16

Queſt. 15th, If I get 6 *Ounces* Bread for one *Penny*, the *Wheat* being 10 *l. per Boll*, What ſhould be the Weight of 1 *Penny* worth Bread, the *Boll* being 13 *l.* 8 *ſh*? State *Lib. Ounce Lib. Shil.*

10 —— 6 —— 13 : 8

Queſt. 16th, If 100 *l.* principal Sum, give 6 *l.* Intereſt in one Year, What is 1 Years Intereſt of 64 *l.* 10 *ſh*? State *Lib. Lib. Lib. Shil.*

100 —— 6 —— 64 : 10

Queſt. 17th, In what Time will 40 *l.* yeild 9 *l.* Intereſt, when 100 *l.* yields the ſame in one Year. State *Lib. Year Lib.*

100 —— 1 —— 40

Queſt. 18th, When Intereſt is at 7 *l.* to 100 *l.* Principal for one Year, What principal Sum would raiſe that Interſt in 9 Months?

State *Year Moneth*

1 —— 100 —— 9

§ III. *The practical Rule another Way accounted for.*

THO' I have accounted for this *practical Rule*, in a very eaſy Manner, for gaining a good Notion of the *Application of Proportion*; yet for the Sake of ſome, who perhaps will not, with Attention enough, conſider the *Connection of the Things I have delivered*; I ſhall here give them a more ſimple Account of the *Reaſon of this Rule*, by examining *two Queſtions:* 1ſt, If 3 *Yards* of Cloth coſt 18 *l.* what is 17 *Yards* worth? State 3 *Yards* — 18 *Lib.* — 17 *Yards*, by the *Rule* we multiply 18 and 17, and divide the *Product* by 3; the *Quote* is the *Anſwer* in *Libs.*

The Reaſon of which is thus found; ſuppoſe it were 1 *Yard* — 18 *Lib.* — 17 *Yards*; 'tis plain if 1 *Yard* coſt 18 *l.* 17 *Yards* would coſt 17 Times as much,

or

or 306 *l.* (and therefore *Note*, that the 17 is in this Sense taken absolutely; so we don't multiply *Libs.* by *Yards*, but *Libs.* by an *absolute Number*, which is very rational) and the *Product* is *Libs*; but 306 *l.* is the Price of 17 *Yards*, only upon *Supposition* that one *Yard* cost 18 *l.* but if this 18 *l.* be the Price of 3 *Yards*, then 1 *Yard* is 3 Times less; (or but a 3d Partof 18 *l.*) consequently 306 *l.* is 3 Times the Price of 17 *Yards*, which therefore must be made 3 Times less, *i. e.* divided by 3, to have the *true Answer*: And so we observe again, that the *Divisor* 3, is *absolute*, and not 3 *Yards*, which has no relation to *Libs*, and so can never divide *Libs* in any Sense.

The same holds in all *Questions*, in which by the *Rule*, the *Extreme* on the right Hand, must be the *Multiplier*.———

Again, examine this *Question*, If 6 Men do a Work in 8 Days; what Time will 4 such Men take to the same Work? State *Men* 6 — *Days* 8 — *Men* 4, 'tis plain they must take more, and so by the *Rule* I multiply 8 and 6, the *Product* 48 I divide by 4, the *Quote* is 12 *Days* for the *Answer*. In all *Questions* like this, where, by the *Rule*, the 1st *Term* is the *Multiplier*; this Reasoning will hold, *viz.* suppose 1 be the 3d *Term*, as here, *Men* 6 — *Days* 8 — *Man* 1, 'tis plain 1 Man will take 6 Times as much Time as 6 Men; and therefore 6 Times 8, or 48, were the *Answer*; but 'tis as certain, that 4 Men will take 4 Times less Time than 1, consequently 48 must be divided by 4, to give the *true Answer* of the *Question*.

In this Way of explaining the *Rule*, we see plainly, that the *two Extremes* are as *absolute Numbers*, the *middle Term* only retaining its *Denomination*; which makes the *Product* and the *Quote* of the same Name, and also the *Remainder*; and the Reason of reducing it is manifest, for being *Part* of the *Dividend*, if we can have no *Quote* of the same Name, we must reduce it to a larger Number, tho' of another Name.

§ IV. *Remark for further explaining the Nature and Application of Multiplication and Division.*

Now as to what I said concerning the *Import* and *true Sense* of *Multiplication* and *Division*, in explaining the *Application* of these *two Operations*, and the *Qualifications* that ought to be put upon the *Question*, when both *Multiplier* and *Multiplicand* signify any Kind of Thing, whether of the same or different Kinds; or in *Division*, when *Dividend* and *Divisor* both, signify some Kind of Things, but different; we see now, I say, plainly, that all these Questions so qualified, resolve into *Proportion*; which being duly stated, all the *Terms* lose, effectually, their *Denominations*; (or all except the *middle Term*, if you please) *Example*, If 'tis proposed to multiply 4 *l.* 10 *s.* by 7 *l.* 6 *s.* or by 4 Month 3 Days; the Question is absurd, unless it have such a Meaning as this, *viz.* to find a Number of Money that shall contain 4 *l.* 10 *s.* as oft as 7 *l.* 10 *s.* or 4 Month 3 Days, contain any *Unit*, (or any other Number) of any *Species* belong-

belonging to the Kind; which is a plain Queſtion of *direct Proportion*, to be ſtated thus, *Lib. ſh.* or *d.* *Lib. ſh.* *Lib. ſh.* and in the other

1 —— 4 10 —— 7 6

Caſe thus; *Month* or *Days* *Lib. ſh.* *Month* *Days*

1 —— 4 10 —— 4 3

the *mixt Terms* being reduced, and the *Extremes* brought to one Name, multiply the 2d and 3d, and divide by the 1ſt *Term*, you have the *Anſwer*. Queſtion in *Diviſion*; let it be propos'd to divide 18 *l.* 16 *s.* 8 *d.* by 4 *Stone* 7 *pound weight*; there is no Senſe here, unleſs you mean to find ſuch a Part of 18 *l.* 16 *s.* 8 *d.* as ſhall be contain'd in it as oft as 4 *Stone* 7 *Pound* contains 1 *Stone* or 1 *Pound*, *&c.* which is a Queſtion of *direct Proportion*, ſtated thus,——

Stone *Pound* —— *Lib.* *ſhill.* *d.* —— *Stone* or *Pound*, &c.

4 7 18 16 8. 1

THE generality who propoſe ſuch Kind of ſimple Queſtions in *Multiplication* and *Diviſion*, not underſtanding the *poſitive abſurdity* of them, expect the Anſwer always ſo, as if the Queſtion were qualified to an *Unit* of the higheſt *Denomination* of the propos'd *Multiplier* and *Diviſor*, tho' they have no Thoughts about ſuch *Qualification*; and therefore, when ſuch Queſtions are made; to ſatiſfy their Ignorance, perform the Work as above directed, taking an *Unit* of the higheſt *Denomination* of the given *Multiplier*, for the 1ſt *Term*, when the Queſtion is in *Multiplication*; or of the given *Diviſor*, for the 3d *Term* in a Queſtion of *Diviſion*; only, you'll find they never propoſe the *Multiplier* or *Diviſor* of another Kind of Thing than the *Multiplicand* and *Dividend*, tho' it may be alſo done, ſince both are Nonſenſe alike, without due Qualification.

AS I have obſerved already upon the *Theory of Geometrical Proportion*, in *Conſequence* 4th *Prop.* 1ſt; all (right propos'd) ſimple Queſtions of *Multiplication* and *Diviſion*, may be reſolved into *Proportion* by bringing in 1, ſo I ſhall add here a Queſtion of each, that the Application of theſe Operations may be completely underſtood.

Queſtion, There is in each of 14 *Sacks*, 3 *Bolls* and 1 *Buſhel* Wheat, What is in the whole? State *Sack* *Bolls* *Buſh.* *Sacks*

1——3 1—— 14 this is plainly nothing but taking 3 Bolls 1 Buſhel 14 Times, for the *Diviſor* 1 will not alter the Product.

Queſt. 5 Men buy 700 *Yards of Cloth*, paying equal Shares of the Price, and being to part the *Cloth* among them, How much ſhall each Man have? He muſt have a 5th Part. State *Men* *Yards* *Men* here the *Multiplier* 1 encreaſes

5 700 1

not the *middle Term*, and ſo the Queſtion is ſolv'd by *Diviſion*.

Obſerve, 1*mo*, There may be Queſtions propoſed that will end in a *Proportion* of the *Rule of Three*, but require ſome previous *Operation* of *Addition*, *Subſtraction*, *&c.* to prepare the Queſtion for a *Proportion*: There can be no general Rule for this; and it muſt be left to every Bodys own Sagacity and good Senſe, in apprehending the Circumſtances of the Queſtion. I ſhall make one *Example*, A Gentleman has a yearly Rent of 700 *l.* What may he ſpend each Day

Day, and lay up 200 *l.* a Year? 'Tis plain we muſt ſubſtract 200 from 700, and ſay, *Year* *Lib.* *Day*

1 —— 500 —— 1

2*do*, The calculating the Value and Quantity of Goods, and the Intereſt of Money, are the Queſtions that occur frequently in Buſineſs; but even with theſe as well as others, there may be ſuch complex Queſtions propoſed, as the final Anſwer cannot be found, but by ſeveral *Operations*, not only of ſimple *Additions*, &c. but there may be ſeveral *Proportions* to be ſtated and reſolved, e'er we have the *Anſwer*. There cannot be any *general Rule* for all theſe *Applications*; the having a true Notion of *Proportion*, ſo as to know by the Senſe of a *Queſtion*, where it is to be applied, is abſolutely neceſſary to this; which Practice will bring one to; the beſt Thing, therefore, that can be done as a Help to this, is, the making of a Collection of various Caſes, wherein the *Application* of *Proportion* is variouſly made, according to the Circumſtances of theſe Caſes. As the *Rule of Three* is the firſt and moſt ſimple *Application*, (ſeeing we ſuppoſe that the Queſtions belonging to it need none but one *Proportion*) ſo all other *Rules* (or *Queſtions* that find the *Anſwer* by more *Proportions* than one, or by one only, but which was not ſo obvious, are nothing but *Applications* of the *Rule of Three*) which being thus explained, and the Reaſon of every Thing made clear, I ſhall have nothing to do in the reſt, but make it plain (if 'tis not ſo of its ſelf) that the *Rules* make a juſt *Application* of *Proportion*, according to the Senſe of the *Queſtion*.

But obſerve, 3*tio*, The foreſaid *practical Rule* is expreſſed, with a particular Regard to ſuch Caſes, in which the Term or Number that moves the Queſtion has a different Signification from the Anſwer; tho' they are conjunct in their Senſe, the ſame Way that the other two given Numbers are; and ſuch are the more uſual Queſtions in common Affairs, as calculating the Value and Quantity of Goods, and the Intereſt of Money. But there are Queſtions ſolveable by a ſingle Proportion, whoſe Terms are not joined in their Senſe, after that Manner; and therefore, could not be ſtated by that Direction; as for theſe, they are always ſo propoſed as to ſhew you how the State muſt be, and whether they are direct or not, at leaſt this will be very plain from the Senſe; of theſe there are ſeveral *Examples* in the Parts of *practical Arithmetick* following; concerning which you'll find this Remark true, *viz.* That theſe two given Numbers that are of the ſame Signification, ſtand in the firſt and ſecond Place; and the other which is like the Anſwer, ſtands in the third Place. For in ſuch Queſtions the Terms that are like other, are theſe that are connected in their Senſe; for they never have any other Senſe, than that of finding a Number of a certain Kind of Thing, ſo proportioned to a given Number of the ſame Kind, as another of the ſame or different Kind, is proportioned to a Third given Number, of this Kind: Which is in very plain Terms, finding a fourth Proportional; ſo in the laſt mentioned Caſes of Multiplication and Diviſion, the Terms, becauſe they have this Senſe, may ſtand more reaſonably thus,——

Mon. Da. &c. *M. D.* *L.* *ſh.* *St. Pd.* *St.* or *Pd.* &c. *L.* *ſh.* *d.*

1 —— 4. 3. —— 4. 10 and 4. 7 — 1 —— 18 16 8.

But

But as to the finding the Answer, 'tis no Matter whether they stand thus, or in the other Way; for we know by the Sense, that the *Proportion* is direct. In the following *Applications* of *Proportion*, I shall take Notice of *Questions* that fall under this *Observation*; and by considering two or three of them, you'll have the perfect Sense of it: I am confident, then, that the following *Rules* and *Applications* diligently considered, and right understood, will bring you to the Capacity required, for applying *Proportion* to a vast many other useful *Questions*, than what my narrow *Limits* could take in.

CHAP. VIII.

RULE of FIVE.

§ I. THIS Rule has its Name from having *five Numbers* given, to find a *Sixth*: Of these there are always 3 conjunctive in their Sense, and which are in Form of a *Supposition*; the remaining *two* (which move the Question,) with the Answer, are the same Way conjunct in their Sense, and respectively like, or of the same *Signification* with the *first three*; by which we may, at first Sight, know a Question of this *Rule*: For tho' there are other complex Questions that are solved by two *Operations* of the **Rule of Three**, (whereof we shall have *Examples* in their Place) yet they have not the fore-mentioned Qualifications.

BESIDES, all Questions that fall under this *Rule*, are such, as include two *Operations* of the *Rule of Three*, so dependent upon one another, that the 4th found by the first *Operation*, must, in the Sense of the Thing, always be the middle Term of the 2d *Operation*; so that the *Answer* of both the *Operations* are of the same *Signification*; but the last is the final Answer. Therefore, if any Question belong to this *Rule*; the Numbers given are such as will answer to this **Practical Rule**. 1*mo*, Having read the Question, finding 5 distinct Numbers given (whether simple or mixt) one of them is always like the Thing sought, set that *one* in the Middle; take these *two* which move the Question, or to which the Answer immediately relates, set them (in any Order) on the right Hand; and the remaining two (which are always like the last two, and are also conjunct in their Sense with the middle Term) set on the left Hand; so as the 1st (on the Left) be like the 4th (*i. e.* that next the middle Term on the Right) and the 2d will consequently be like the 5th, *i. e.* the Extreme on the right Hand. 2*do*, Take the 1st, 3d and 4th so stated, and with them you can form a distinct Question of the *Rule of Three* (in which you may assume the 2d Term in both *Supposition* and *Demand*, it will help to form the Question right; but

but neglect the fifth Term altogether in the first *Operation*:) and having duly performed the *Operation* of that *Rule*, take the Answer found, and make it the middle Term of a 2d *Operation*; On the right Hand whereof, set the 5th, and on the Left, the 2d Term of the five stated: By these you can form a new Question of the *Rule of Three* (assuming the 4th Term of the Five, which was the right Hand Extreme of the last *Operation*; and repeat it in the *Supposition* and *Demand.*) The Thing found by this *Operation*, is the final Answer of the Question.

I have not made a Distinction of the Rule of Five, *direct* and *indirect*, as has been commonly done, to no other Purpose than making needless Difficulty; especially since *direct* or *indirect* considered any other Way, than as it relates to the two single *Operations*, is not easily understood, and far less without any Explanation of it: And yet according to these *Rules*, which distinguish them, you must know whether a Question is *direct* or *indirect*, in Order to the right stating of it.

But I have given you an easy and general *Rule*, which requires only that you understand the *Rule of Three*; in which I have as little troubled you with the Distinction, tho' I have explained it afterwards, that you may know it.

The following Collection of Questions are of that Kind, which make the most useful *Application* of this *Rule*.

Quest. 1. If 25 *Stone Weight*, for being carried 16 *Miles*, cost 15 *Lib.* 10 *sh.* What will 40 *Stone* cost for 9 *Miles?* State *St.* *Miles* *L.* *sh.* *st.* *Miles.*

25 — 16 — 15 : 10 — 40 — 9

Answer is 13 *L.* 19 *sh.*

1mo, *OPERATION* 2do,

St.	*L.*	*Sh.*	*St.*	*Miles*	*Sh.*	*M.*
25	15 :	10	40	16	496	9
	20				9	
25	310 *sh.*		40	16)	4464	(279, which by Reduction is 13 *l.* 19 *s.*
	40				32	
25)	12400	(496			126	
	100				112	
	240				144	
	225				144	
	.150				...	
	150					
	...					

The Sense and Connection of the *Two Operations* is very plain; for by the *First*, I find what 40 *Stone* will cost for 16 *Miles*, for according to the *Rule*,

 I assume

I aſſume the 16 *Miles* in the 1ſt *Operation*, which I form thus, *viz.* If 25 *St.* coſt 15 *l.* 10 *s.* (for 16 *Miles*) what will 40 *St.* for the ſame 16 *Miles?* And then by the 2d *Operation* I find what it (the 40 *Stone*) will coſt for 9 *Miles*: And you'll ſee this Connection plainly in every Queſtion.

Queſt. 2d. If 18 *Stone* 14 *Pound* Weight was carried 7 *Miles* for 10 *s.* how much ought to be carried 16 *Miles* for 5 *l.* 14 *s?*

State *M. ſh.* *M. L. Sh.*
7—10—18 *St.* 14 *Pd.*—16—5 : 4

Queſt. 3d, If 246 *l.* board 9 *Men* 18 *Months*, how long will 48 *l.* board 5 *Men?*

State *Men* *Months*
9—246 *l.*—18—5 *Men*—48 *l.*

Queſt. 4th, If 10 *Men* ſpend 50 *l.* 16 *s.* in 3 *Years* 18 *Days*, what will ſerve 16 *Men* for 4 *Months?*

Men *Y.* *M.* *D.* *L.* *Sh.* *Men* *Mon.*
10—3 : 0 : 18—50 : 16—16—4

Queſt. 5th, If 3 *Chalder* 10 *Bolls* of *Oats* be eaten by 24 *Horſes* in 14 *Days*, how many *Horſes* will eat 12 *Bolls* 3 *Buſhels* in 2 *Days?*

Ch. Bolls *D.* *Horſes* *Bolls Buſh.* *D.*
3 : 10—14—24—12 : 3—2

Queſt. 6th, If 6 *Days* were allowed 16 *Maſons* to build a *Fort* able to hold the *Enemy* 4 *Days*, but Orders coming that it muſt hold out 6 *Days*, and but 4 *Days* allowed to build in, how many *Maſons* will it require?

D. *D.* *Ma.* *D.* *D.*
6—4—16—4—6

Queſt. 7th, If 40 *Men* do a Piece of Work in 17 *Days*, the *Day* being 19 *Hours* long; in what Time will 30 *Men* do it, the *Day* being 16 *Hours* long?

Men *H.* *D.* *Men* *H.*
40—19—17—30—16

Note, This *Queſtion* can be ſolved thus, multiply 19 by 17, the Product is the whole Time, in *Hours*, taken up by 40 *Men*; then ſay, if

Men *H.* *Men*
40—323—30

If the Anſwer is divided by 16, the Quote is the Number of *Days* ſought; and all Queſtions where the Length of the *Day*, and the Number of them are given as diſtinct Terms, tho' they come under this *Rule*, may be eaſier done without it. The Method will be plain from the Nature of the Queſtion.

Queſt. 8th, If when the *Wheat* is at 10 *l.* the *Boll*, 8 *Ounces* of *Bread* coſt 6 *d.* what ſhould the *Boll* be, that we may get 12 *Ounces* for 4 *d.?*

State *Ou.* *d.* *Lib.* *Ou.* *d.*
8—6—10—12—4

Queſt. 9th, When *Wheat* is at 16 *l.* 10 *s.* the *Boll*, I get 7 *Ounces* Bread for 5 *d.* How much ought I to get for 8 *d.* the *Wheat* being 18 *l?*

L. *ſh.* *d.* *Ou.* *L.* *d.*
16 : 10—5—7—18—8

Queſt. 10th, If 100 *l.* Principal gives 6 *l.* Intereſt in one *Year*, what is the Intereſt of 64 *l.* 10 *s.* for 5 *Months?*

L. *Y.* *L.* *L.* *ſh.* *Mo.*
100—1—6—64 : 10—5

Queſt.

Queſt. 11th, WHAT principal Sum will raiſe 18 *l.* Intereſt in 2 *Years* and 7 *Months*, at the Rate of 5 *l.* 10 *s.* Intereſt to 100 *l.* in one *Year*.

T. L. ſh. L. Y. M.
1—5 : 10 — 100—2 : 7——18

Queſt. 12th, WHEN 100 *l.* gains 6 *l.* Intereſt in one *Year*, in what Time will 768 *l.* 16 *s.* 8. *d.* yield 94 *l.* 10 *s.*? State *L. L. Y. L. ſh. d. L. ſh.*

100—6—1 — 768 : 16 : 8—94 : 10

When theſe Queſtions are well conſidered, it will appear very plain, what is the Nature and Circumſtances of the Queſtions that come under this Rule.

Obſerve, TO perform theſe Queſtions by two *Operations*, we ſee, is very plain and eaſy to the Underſtanding; yet it has this Diſadvantage, That when the Diviſion of the firſt *Operation* is brought down to the loweſt *Denomination*; if there happen to be a Remainder; it muſt either be neglected in the ſecond *Operation* (which tho' it is as nothing in a ſingle *Caſe*, may yet make a conſiderable Error in this *Caſe*) or you muſt bring it as a *Fraction* into the 2d *Operation*; which tho' you knew how to do, will make a very troubleſom *Operation*. And therefore take the following

§ II. *Rule for working the Queſtions by one Operation.*

HAVING ſtated the 5 given Numbers as directed; reduce every mixt Number to a ſimple, and make the correſpondent Terms, *viz.* 1ſt and 4th, 2d and 5th of one *Species*, then form the two ſingle Queſtions as if you were to work for the Anſwer that Way, (and becauſe the Anſwer of the firſt *Operation* is not actually found, you may conceive the middle Term to be it; for it is the ſame Thing what it be ſuppoſed) let theſe two Terms, which would be the *Diviſors* of the ſingle *Operations*, be marked, and multiplied into one another; keep the Product for a *Diviſor*; and the other three Terms multiply continually into one another, (*i. e.* any one by another and the Product by the Third) the laſt Product make a *Dividend*; divide this by a former *Diviſor*; the Quote is the Anſwer ſought, like the middle Term; reduce the Remainder and finiſh the *Diviſion*: And tho' there be a Remainder in the loweſt *Denomination*, 'tis of no Value, ſince 'tis to be no further uſed.

The firſt Queſtion by one *Operation*.

St. M. L. ſh. St. M.
25—16—15 : 10—40—9

29

25—16—310—40—9

16 40

150 12400
25 9

400 111600

L. Sh.
400) 111600 (279, or 13 : 19
8

31
28

36
36

..

THE Reaſon of this laſt *Rule*, lies in this, That if *two Numbers* are equally multiplied, the Products remain ſtill in the ſame *Ratio*, [as by *Prop.* 1. *Conſeq.* 2. of *Geometrical Propor.*] *i. e.* [by *Defin.* 2.] divide the one *Product* by the other, the *Quote* is the ſame, as if the one *Multiplicand* be divided by the other; ſo 4 and 12 multiplied by 5 produces 20 and 60, whoſe *Ratio*, that is, whoſe *Quote* 3 is the ſame as that of 12 by 4. To apply this to the preſent Caſe, we muſt take the 2d *Operation*, (of this Queſtion as it was done by two) becauſe that gives the final Anſwer 496 *s.* the *middle Term*, or *Multiplicand*, is by the firſt *Operation* the 25th Part of the Product of 310 *s.* by 40: In the 2d *Operation* it is multiplied by 9, ſo that the *Dividend* of the laſt *Operation*, is 9 multiplied into the 25th Part of the *Product* of 310 *s.* by 40; but if inſtead of a 25th Part, we take that whole *Product*, (which is 25 Times as great as its 25th Part) and multiply it by 9; we ought alſo to multiply the *Diviſor* 16 by 25, that the *Diviſor* and *Dividend* which quote the Anſwer here, may be in the ſame *Ratio*, (*i. e.* have the ſame *Quote*) as the *Diviſor* and *Dividend* of the former 2d *Operation*, which gave the final Anſwer: Both which are actually done in the *Operation* above, and from this Reaſoning 'tis plain, that it muſt be ſo in every Caſe wrought by this Rule, which is therefore good.

CHAP. IX.

RULE of FELLOWSHIP.

§ 1. THIS *Rule* ſhews how, by two or more independent *Operations* of the *Rule of Three*, to divide any Number into unequal Parts, proportionally to certain given Numbers. RULE, Add theſe given Numbers into one, and ſay (in ſo many diſtinct Operations) *As* that Sum *is to* the Number to be divided, *ſo is* each Part (of the ſaid Sum) to the *correſpendent Part*, of the *middle Term*, ſought; in *direct* Proportion.

This Rule is ſo plain an Application of Proportion, it needs no more Explication.

Queſt.

Queſt. 1. Two Men *A* and *B*, put into a common Stock, *viz.* *A* 240 *l.* and *B* 360 *l.* at balancing their Accompts, they found 80 *l.* of Gain or Loſs; What is each Man's Share of it?

OPERATION.

If *Lib.* 600 Gain —— *Lib.* 80 what —— *Lib.* 240?

Lib. 600 — 80 — *Lib.* 360

A ——	240 *l.*
B ——	360 *l.*
Total Stock	600 *l.*

240 — 360

600) 19200 (32 *A.* — 600) 28800 (48 *B.*

18 — 24

12 — 48

12 — 48

Proof

A's Share —	32 *l.*
B's Share —	48 *l.*
Total Gain	80 *l.*

Queſt. 2d, *A*, *B*, *C*, put into a common Stock, *viz.* *A* 246 *l.* *B* 392 *l.* 18 *s.* *C* 278 *l*; they gain or loſe 64 *l.* What is each Man's Share?

A - -	246			246	
B - -	392 : 18				
C - -	278			392 : 18	
Proportions	916 : 18	— 64 —		278	

Queſt. 3d, THERE are three Horſe *A*, *B*, *C*, in the ſame Time that *A* can eat 5 Bolls of Oats, *B* can eat 7 Bolls of Oats, and *C* 9 Bolls: How ought 25 Bolls to be divided amongſt them, that they may begin and end their Eating together?

A ——	5			
B ——	7			
C ——	9			
		Bolls	5	to the proportional Parts of 25 Bolls;
Direct propor.	21 ——	25 —	7	for their Wholes are as their like
			9	Parts, [*Prop.* 1 *Conſeq.* 2.]

NOTE, The State of the firſt two Queſtions is according to the Direction of the *Rule of Three*; but in this laſt, (which is an *Example* of what I ſaid in *Obſerve* 3d at the End of the *Rule of Three*) the Senſe is different, and imports only the finding Parts of 25 ſo proportioned to it, as 5, 7, 9, are to 21. Indeed by ſetting 5, 7, 9, in the middle you might form the Queſtion thus; If *A* get 5 of 21, what muſt he get of 25, *&c.* which ſhows plainly a *direct Proportion*; and as to finding the Anſwer 'tis the ſame thing whether it be thus, or that 25 be in the Middle: Only the putting 25 makes it agreeable to the *general Rule.*

Queſt.

Queſt. 4th, *A* and *B* buy together 450 Yards of Cloth; of the Price whereof *A* paid 96 *l.* and *B* 142 *l.* 16 *s.* How many Yards belongs to each?

	Lib.	*ſhil.*		
A ——	96			
B ——	142	16	*Yards* ——	96
Proportion	238	16 ——	450 ——	142 16

Queſt. 5th, *A*, *B*, and *C*, concerned in Company thus; *A* put in 45 *l.* which he withdrew at 3 Months end; *B* put in 58 *l.* for 5 Month; *C* 92 *l.* for 7 Month; at which Times end they Balance, and find 64 *l.* Gain: What's each Man's Share?

In all Queſtions of this Kind, we muſt Reſpect the Time. Let every Man's Stock and its Time of continuance, be all brought to one *Species* of Money and Time; multiply each Stock by its Time, (as an *abſolute Number*) and the Proportions muſt be drawn from theſe *Products*, thus;

	Lib.		*Lib.*	*Lib.*	*Lib.*
		A	45	*B* 58	*C* 92
A —	135		3 *Mon.*	5 *Mon.*	7 *Mon.*
B —	290				
C —	644		135	290	644
		l. 135			
Proport.	1069	Gain 64 —	290	to the proportional Shares (of 64 *l.*)	
			644		

The Reaſon of multiplying the Stocks and Times, is, that if the Stocks and Times are all equal, the Gains are all equal, and we have only to divide the Gain by the Number of Partners; but if the Times are only equal, it is plain, the Shares of the Gain are proportional to the ſimple Stocks: If the Stocks are equal, theſe Shares are proportional to the unequal Times; and conſequently both being unequal, the Share muſt be proportioned to both multiplied together; if you perceive not this Reaſon, you may be perfectly ſatisfied by conſidering this *Example*; if my Stock is double to your's, but your's continued in Company, double Time of mine, 'tis plain, you claim equal Gain; and ſo it is by the *Rule*, for my double Stock multiplied by the ſame Time with your's, makes a double Product; but if multiplied by the Half of your Time will make an equal Product; and ſo in any other *Proportion* of the *Stocks* and *Times*, the multiplying them together encreaſeth each *Stock* in *Proportion* to 'tis Time; and conſequently the Share of Gain found by uſing theſe *Products*, are truly proportioned to both *Stock* and *Times*.

§ II.

§ II. *To prove Fellowship.*

WE ought to add all the Shares found, their Sum must be equal to the *middle Term*, or *Number divided*; but if there are *Remainders*, tho' of the least *Species*, in all or any of the *Operations*, you must add all these *Remainders*, (being of one *Denomination*) divide their *Sum* by the *common Divisor* of the *Operations*, in this *Division* there ought to be no *Remainder*, and the *Quote* added to the Sum of the *Shares*, will make them equal to the *Number* divided. The Reason is plain, for all these *Remainders* are *Parts* of the several *Dividends*; and being added together, when divided by the *common Divisor*, the *Quote* is the remaining Part, which belongs in common to all the *Partners*; but so small, that it cannot be parted proportionally to their *Stocks*. I shall take notice of these *Remainders*, in explaining *Fractions*.

CHAP. X.

ALLIGATION.

THIS *Rule* teacheth to mix several *Simples* of one general Kind, but of different Values, into one *Compound*; to be sold at a certain Value, so that there be neither Gain nor Loss, *i. e.* that as much be received from the *mixt Quantity* sold at that Value, as if all the *Simples* had been sold at their respective Rates. Here then are three distinct Things, *viz.* the *Quantity* of the *Simples* taken into the *Mixture*, the Prices of these *Simples* (*per Gallon, Boll, Yard, &c.*) and the Price or Rate of the *Mixture*: Two of these being known, is sufficient to find the *Third*, by the following Instruction.

Case 1st, Having the Quantities and Rates of several *Simples*, to find the Price of the *Mixture*. *Rule.* By a *direct Proportion*, calculate the total Value of each *simple Quantity*; add these Values into one *Sum*, and also add all the *Quantities*; and then by *Proportion* say, *as* this *Sum* (of *Quantities*) *is to* that *Sum*, (which is its Value) *so is* any Quantity of the *Mixture*, *to* its Value. This is so plain an Application of the *Rule of Three*, it needs no more Explanation.

Quest.

Queſt. A Merchant would mix Wines thus, *viz.* he would take 13 *Gallons* at 17 *ſh. per Gallon*, 11 *Gallons* at 15 *ſh.* and 19 *Gallons* at 14 *ſh.* how may he ſell 1 *Gallon* of the *Mixture*? *Anſwer*, at 15 *ſh.* 1 *d.* 3 *f.* and $\frac{11}{43}$ Parts of a *Farthing*.

OPERATION.

Gal.		*ſh.*
13	(at 17 *ſh.*) total Value is	221
11	(at 15)	165 Propor.
19	(at 14)	266
43	total Quant. whoſe total Val. is	652

Gal. — *Shil.* — *Gal.*
43 — 652 — 1

1

43) 652 (15
43

222
215

7 Remainder
12

43) 84 (1 *d.*
43

41 Remainder
4

43) 164 (3 $\frac{35}{43}$ *f.*
129

35

Queſt. 2d, A Farmer would mix Wheat thus, *viz.* 7 Bolls at 15 *l. per* Boll; 9 Bolls 3 Buſhels at 10 *l.* and 6 Bolls at 12 *l.* 14 *ſh.* what is 1 Peck of the Mixture worth?

Caſe 2d. Having given the Price of the Mixture (which muſt always be leſs than the greateſt, and greater than the leaſt *Simple*; elſe 'tis plain, the Condition of this *Rule* can never be anſwered, for you muſt neither gain nor loſe) and the Price of the ſeveral *Simples*, to find the *Quantity* of theſe *Simples*. Rule, the Prices given belonging all to a Quantity of the ſame *Denomination*, (as Ounces, Bolls, *&c.*) let them be all of one *Species*, (as *lib. ſh. &c.*) then, ſet them down in the Method of the following *Example*, and connect the ſeveral ſimple Prices one with another, (as is there done); ſo that, one leſſer and one greater than the *Mixture Price* be always joined; every greater may be connected with one that is leſs, and contrarily; or with one or two, *&c.* as you pleaſe, but it will be enough, that every *Simple*, be connected with one other, a greater with a leſſer; then take the Difference betwixt the *Mix-*

ture

ture Price, and the *Price* of each *Simple*, and ſet that down againſt every *Simple*, with which this one is connected: *Laſtly*, ſum up all theſe Differences, if their Sum is taken for the Quantity of the total *Mixture*, the ſeveral Differences themſelves are the Quantities ſought, (of the ſame Denomination with that *Quantity* to which the given Prices belong) of the ſeveral *Simples* reſpective, againſt which theſe Differences ſtand.

NOTE, beeauſe in writing down the Differences, there may ſtand ſeveral againſt one Price, (according as it is joined to more than one) you muſt ſum them up, as if they ſtood all over one another.

Queſt. A Merchant would mix Wines thus, *viz.* he would take ſome at 14 *ſh. per* Gallon, ſome at 19 *ſh.* ſome at 22 *ſh.* and at 15 *ſh.* to be ſold at 18 *ſh.* How much may he take of each Kind?

OPERATION.

Sh.		*Gall.*	*Sh.*		*Gall.*	*Sh.*		*Gall.*	*Sh.*		*Gall.*	*Sh.*		*Gall.*
	14	4		14	1		14	1		14	1, 4		14	4, 1
Sh.	19	3	*Sh.*	19	4	*Sh.*	19	4, 3	*Sh.*	19	4	*Sh.*	19	4, 3
18	22	4	or 18	22	3	or 18	22	3	or 18	22	4, 3	or 18	22	4, 3
	15	1		15	4		15	1, 4		15	4		15	1, 4
		Gall. 12			*Gall.* 12			*Gall.* 16			*Gall.* 20			*Gall.* 24

EACH of theſe *Solutions* anſwer the Demand exactly; (or any other Combination that can be made within the *Rule*;) ſo that for *Example*, if you take the firſt Method of Connection, it gives 4 *Gallons* of the Wine at 14 *s.* 3 *Gallons* at 19 *s.* 4 *Gallons* at 22, and 1 at 15, the Total whereof is 12 *Gallons*.

REASON of this *Rule*, ſuppoſe there were no more in an *Example* but this. It is plain if we take 5 *Gallons* at 18 *s.* and 2 at 11 *s.* and ſell them at 16 *s.* there is neither Gain nor Loſs; for, by ſelling 5 *Gallons* (worth 18 *s.*) for 16 *s.* we loſe 5 Times the Difference of 16 and 18. (*i. e.* 5 Times 2) which Difference is always ſet againſt the other: But we gain as much upon the 2 *Gallons* (at 11 *s.*) ſold at 16 *s. viz.* 2 Times the Difference of 16 and 11, *i. e.* 2 Times 5 (which ſtands againſt the Firſt:) Now, 'tis plain by ſetting the Differences thus in any Caſe, where there are but two *Simples*, the *Rule* is good; for, the Loſs upon the deareſt Kind is always equal to the Product of the *Difference* betwixt that *ſimple Price*, and the *mixture Price*, *multiplied* into the Quantity ſtanding againſt it, which is always the Difference betwixt the *mixture Price* and the cheapeſt; the Gain upon which, is juſt equal to the Former, *viz.* to the ſame Product. But let the Number of *Simples*, and their *Combinations*, be as many as you pleaſe, the *Rule* muſt ſtill be good; for, it is ſo with Reſpect to every ſingle *Combination* of *Two*: If therefore, there be no Gain or Loſs upon every ſingle *Combination*, there can be none, when the Anſwers of more ſuch are joined together; as it actually

Sh.		
16	18	5
	11	2
Gallons		7

is in any Caſe of a greater Number of *Simples*, any Way combined by the *Rule*.

For further Application of Caſe 2d, make Uſe of the following,

NOTE, 1. If the total Quantity of the *Mixture* is limited; then, having made any one *Combination* you pleaſe, if the Sum of it differs from the Total given; you muſt by ſo many *Operations*, proportion the particular Quantity to the Total given, *i. e.* if its greater or leſſer than the Total of the *Combination*, the *Particulars* muſt be made greater or leſſer proportionally; thus,—as the Sum of the Quantity in the *Combination*, is to the ſeveral *Particulars*, ſo is the Total given, to its proportional *Parts* ſought.

THE State of this *Proportion* is very plain; and the Quantities found being ſtill in the ſame *Ratio* reſpectively to one another, as thoſe in the *Combination*, the Balance of Gain and Loſs remains ſtill equal.

EXAMPLE, ſuppoſe in the laſt *Queſtion*, beſides the *Prices* of the *Simples* and *Mixture*, you are limited to 18 *Gallons* of Total *Mixture*.——I make any one *Combination* ſuppoſe this.——

Sh. 14	1		1				
18 19	4, 3	Proportion	16—	7—	18—	*&c.*	To the particular proportional
22	3			3			Quantity ſought.
15	1, 4			5			
Gal. 16							

THE Proof is by adding all the Quantities found, (as in the Rule of Fellowſhip) their Sum muſt be equal to the Total given (18 *Gallons.*)

NOTE 2. If inſtead of the Total *Mixtures*, you are limited to a certain Quantity of one of the *Simples*; then, having made any *Combination* as before, if the Quantity given is greater or leſs, than the Quantity ſtanding (by the *Combination*) againſt that *Simple* whoſe Quantity is limited, (or given) 'tis plain all the other Quantities muſt be made greater or leſſer proportionally; and ſo the Balance of Gain and Loſs remains ſtill equal.

EXAMPLE, ſuppoſe in the laſt *Example*, we ought to take 7 *Gall.* of the Wine at 22 *s.* uſing the ſame *Combinations* as before, the *Proportions* are, 3—7—7 1/5 to the Quantities ſought: Which, with the 7 *Gallons* given, being all added, the Proof is made by this *Proportion*; *viz.* 3——7——16——the Fourth found, muſt be equal to the laſt mentioned Sum; becauſe, by *Propoſition* 1ſt, *Wholes* are as their like Parts, and all the Parts which make up 16 and 18, are reſpectively proportional; whereof 3 and 7 are the correſpondent *Parts*. So having made any *Combination*, you may encreaſe or decreaſe the Quantities ſhown by that, according to any *Proportion*: but they muſt all be proportionally encreaſed or decreaſed.

Obſerve,

Obſerve, THE *Proportions* ſtated in theſe two *Notes*, are *Examples* of what I ſaid at *Obſervation* 3d, at the End of the *Inſtruction* upon the Rule of Three. Where there is only one *ſimple Price* greater or leſſer than the *Mixture Price*, 'tis plain there can be no Variety of *Combinations*; becauſe all the reſt muſt be connected with that one, ſince there is not another to connect them with. *Caſe* 1ſt, is commonly called **Alligation Medial**: *Caſe* 2d, **Allegation Alternate**, particularly *Note* 1ſt, is *Allegation alternate* **Total**; and *Note* 2d, *Allegation alternate* **Partial**: But there is no Reaſon to be troubled with ſuch *Names*.

CHAP. XI.

Concerning INTEREST, *Simple and Compound.*

§ I. *Simple Intereſt.*

IN all *Queſtions* about **Intereſt**, there are four diſtinct Things to be remarked. 1. The *principal Sum*. 2. The *Time*, which it is ſuppoſed to ly out at *Intereſt*. 3. The *Intereſt* due for that Time. Any two of theſe being known, the other will be eaſily found: Providing we have, 4*to*, The *Rate of Intereſt*, *i. e.* the *Intereſt* of 100 *l.* or any other Sum, you pleaſe, for one *Year* (or any Time;) this fourth Thing includes 3 Terms, *viz.* 1*mo*; 100 *l.* 2*do*, Its *Intereſt*. 3*tio*, For 1 *Year*; which with any two of the firſt Three, are required to be known, in order to find the remaining one of the ſaid Three, by the **Rule of Five**, of which the *Queſtions* 10, 11 and 12, are diſtinct *Examples* (which ſee and operate). Theſe, indeed, are the moſt frequent and common Queſtions about *Money* and *Intereſt*, eſpecially *Queſtion* 10th, when the *Intereſt* of any principal Sum, for any Time, is required, at any given Rate: The Method and Senſe of that Queſtion being ſo plain, I do not eaſily think any Body will find it difficult to apply, when they come to actual Buſineſs; but becauſe Queſtions are not always ſo ſimply propoſed, I ſhall add two Queſtions involved in other Circumſtances, where I ſhall ſhow (what I promiſed) how to be as exact as poſſible, in reckoning the Time for which Intereſt is calculate.

Queſt. 1. THERE is 400 *l.* Principal lent upon Bond, dated 20th of *February* 1705, bearing Intereſt from the Date; How much Intereſt is due 1ſt of *Auguſt* 1712?—— This Queſtion is very plain, only we muſt take care to mind how

how the Rate of Intereſt goes by Law; if the Intereſt was at one Rate all that Time, the Queſtion is very ſimple; but if it changed, we have a Calculation to make for every different Rate falling within the Time of the Queſtion, in order to which we muſt conſider, how much of the propos'd Time was at every particular Rate, and calculate accordingly. Therefore I ſuppoſe that Intereſt by Law was at *6 l. per Cent*, from *Whitſunday* 1704 to *Martinmaſs* 1705; and then at *5 l.* 10 *s.* to *Martinmaſs* 1708, thereafter at *5 l.* for the remaining Time of the Queſtion. It is plain then, we have three diſtinct Calculations, *Firſt*, To find the Intereſt of 400 *l.* at *6 l. per Cent*, from 20th of *February* 1705, to *Martinmaſs* 1705. *Again*, At *5 l.* 10 *s.* from *Martinmaſs* 1705, to *Martinmaſs* 1708. And *laſtly*, At *5 l.* from *Martinmaſs* 1708, to the 1ſt of *Auguſt* 1712; and having found them, add all theſe Intereſts into one Sum, it is the Anſwer of the Queſtion.

Queſt. 2. THERE is 246 *l.* principal Sum bearing Intereſt from 1ſt of *May* 1715, at *6 l.* to the 100 *l.* in a Year; upon the 14th Day of *March* 1716, there was paid 54 *l.* and upon the 1ſt Day of *July* 1717, was paid 60 *l.* What was due after that laſt Payment?

THE Method is evidently this, *viz.* find (by the Method of *Queſt.* 10th before mention'd) the Intereſt of 246 *l.* at *6 l per* 100 *l.* in a Year, for the Time betwixt the 1ſt of *May* and 14th of *March* thereafter, and add that Intereſt to the principal Sum, (for 'tis plain, ſo much is due at that Time;) from which ſubſtract the firſt Payment 54 *l.* and the Remainder is, what remains due 14th *March* 1716. *Next*, Calculate the Intereſt of the ſaid Remainder, (which is now the principal Sum) for the Time from 14th *March* 1716, to 1ſt of *July* 1717; which Intereſt add to the ſaid Principal, it is the Sum due the 1ſt of *July*; from which ſubſtract the Payment then made, 60 *l*, the Remainder is what is due after that Payment.

NOTE, In ſuch Queſtions as this, you muſt be careful to obſerve, whether the Intereſt due at any Time be greater or leſs, than the Payment made at that Time; for if it be greater, you muſt not add it to the Principal, becauſe then the Payment ſubſtracted from the Sum, will not exhauſt the whole Intereſt, and there will remain the whole Principal, and a Part of the Intereſt; upon which if you calculate Intereſt for the next Time, it will be Intereſt upon Intereſt, contrary to Law, or at leaſt, to the Meaning of the Queſtion here propoſed: Therefore in ſuch Caſes, you muſt, as oft as it falls out ſo, ſubſtract the Payment made from the Intereſt due at the Time, and keep the Remainder to be added to the Principal found at laſt to be due, and carry on the Calculation of Intereſt by the Principal uſed, in the preceeding Calculation.

IT remains only to ſhow, how to be exact in the Time: For which take this Direction, *viz.* For every whole Year, (from the Day the Intereſt commences) reckon 365 Days, *i. e.* for 1 Year, 365 Days, and for a greater Number of Years, as 4, multiply 365 by that Number, as 4; and then for the remaining Time which Wants of a Year, you muſt conſider how many Days are in each Month, (according to this TABLE: *viz.*, *April*, *June*, *September* and *November*, have each 30 Days; all the other Months have each 31, except *February* which hath

ſixth 28 Days) ſet down the remaining Days of the Month, in which your whole Years end, and the Number of Days of each other whole Month, within the Time of the Queſtion; and if it end within any Month, ſet only down the Number to that Day, in which your Calculation ſhould end, and all theſe Days add together, and with that Sum calculate the Intereſt ſought. —— So in *Queſtion* 1ſt, for the firſt Calculation you have from 20th of *February* 1705, to *Martinmaſs* 1705, (*i. e.* to 11th of *November*) 246 Days. The 2d Calculation is from *Martinmaſs* 1705 to *Martinmaſs* 1708, which is 3 whole Years, in which are 3 Times 365 Days, or 1095 Days. And for the laſt, from *Martinmaſs* 1708, to 1ſt of *Auguſt* 1712, there are 3 Years, (*viz.* from *Martinmaſs* 1708, to *Martinmaſs* 1711,) and then the odd Time to 1ſt of *Auguſt* 1712, which is in all 1358 Days. —— You may ſee the Method here.

Days			
8	remains of *Feb.* 1705,	from *Martinmaſs*	365
31	*March*,	1705, to *Martin-*	3 Year from *Martinmaſs*
30	*April*,	*maſs* 1708, are 3	[1708 to 1711.
31	*May*,	Years.	1095 Days.
30	*June*,	365 Days in one	20 remains of *Nov.* 1711.
31	*July*,	3 [Year	31 *December*,
31	*Auguſt*,	1095	31 *January*,
30	*September*,		28 *February*,
31	*October*,		31 *March*,
11	of *Novemb. viz.* to *Mar-*		30 *April*,
	[*tinmaſs* 1705.		31 *May*,
264			30 *June*,
			31 *July*.
			1358

If you would be ſtill more exact, then, for every 4 whole Years, you are to add 1 Day more; becauſe every Year contains 365 Days and 6 Hours, which in 4 Years makes 1 Day; but perhaps few Occaſions demand even ſo much exactneſs as I have already propoſed: However I thought it proper, to give Rules that would be ſtrictly good.

But if the *Intereſt* due upon any *Principal* for any *Time*, be added to that *Principal*, the Sum is called the **Amount** of that Principal and its Intereſt, for that Time; and then, the 4 Things to be marked are, 1*ſt*, The Principal. 2*do*, The Amount. 3*tio*, The Time. 4*to*, The Rate of Interest. Any three of which being given, the other may be found by a due Application of *Proportion* in 4 diſtinct Queſtions.

Queſt. 1ſt, The *Rate* of *Intereſt*, *Principal* and *Time given*, to find the *Amount*. **Rule**, 'Tis plain if we find the *Intereſt* of the given *Principal*, for the given *Time* and *Rate*, [by *Queſt.* 10. *Rule of Five*] and add that to the ſaid *Principal*, we have the *Amount* ſought; and ſo need no *Example*.

Queſt.

Queſt. 2d, The *Rate* of *Intereſt*, *Amount*, and *Time* given, to find the *Principal*, (which in that *Time* gives that *Amount.*) **Rule**, Find the *Intereſt* of 100 *l.* at the *Rate* given for the *Time* given, which add to 100 *l.* and ſay, as *that Sum*, (or *Amount*) is to 100 *l.* ſo is the *given Amount* to a 4th *Proportional*, which is the Anſwer. The Reaſon of this State is, That ſince all principal Sums are directly Proportional to their Intereſt, (for equal *Time*) they muſt be in the ſame *Proportion* to their *Amounts*, (for that Time) which is only the Sum of Principal and Intereſt, *i. e.* 100 *l.* — 6, — 200 *l.* — 12 *l.* for one Year; then 100 — 100 and 6, — 200 — 200 and 12, [by *Propoſ.* 4th of *Geomet. Proport.*] and therefore alſo *Inverſely* 106, — 100, — 212, — 200. [by *Propoſ.* 3d.]

This *Caſe* occurs frequently in Buſineſs, of which I ſhall make a *practical Example*, *viz.* There is 106 *l.* due at 2 Years end, What is the preſent Worth of it, rebating *6 per Cent*, for one Year? 'Tis very plain, there muſt be ſuch a Sum given, as being lent out at that Intereſt, will in 2 Years amount to 168 *l.* therefore find 2 Years Intereſt of 100 *l.* at 6 *l.* in the Year; thus,

Year Lib. Year gives *Lib.*

1 — 6 — 2 — — — 12, ſo that 100 *l.* in 2 Years at that Rate, amounts to 112; and then I ſay 112 *l.* — 100 *l.* — 168 *l.* work and you'll find 150 *l.* the *Principal* or preſent *Worth* ſought; the Difference betwixt this *Principal*, (*i. e.* the preſent *Worth*) and the *Amount* is the allowed diſcompt; and you may call this Caſe the **Rule of Rebate at ſimple Intereſt.**

Note, There is a very common and eaſy Miſtake about this Queſtion: For, when 'tis propos'd to find what Sum paid preſently, will ſatisfy a Debt not due for ſome time hereafter, allowing the Payer rebate for the Intereſt of his Money; it appears at firſt, that the Intereſt of his Sum (as 100 *l.*) being calculate for the Time, which he may keep it in his Hands, (as one Year) and that Intereſt ſubſtracted from the Sum due, (ſuppoſe 6 *l.* from 100 *l.*) the Remainder, (*viz.* 94 *l.*) is the Sum to be preſently paid; and the Payer would argue the fairneſs of it thus, —— *ſays he*, If I lend out that 100 *l.* to another, it will yield me 6 *l.* in one Year, therefore to pay you 100 *l.* one Year before due, makes me 6 *l.* Loſer, conſequently you muſt deduce that 6 *l.* But this Argument is falſe, becauſe when the lends out his 100 *l.* that 6 *l.* is not due to him till one Year run, and he demands it as if it were to be preſent Payment (off him, from whom he is to have Rebate.) But the other argues more juſtly, thus, —— If you give me ſuch a Sum of Money, as lent out at Intereſt will amount to the Sum due at the Time when it was payable, there is neither Gain or Loſs upon either Hand. And yet Mr. *Hatton* directs to the other Method, which can have no Excuſe, unleſs he thought the Difference would be of no great Conſequence in ordinary Caſes: But in delivering *Rules of Arithmetick*, there ſhould be nothing leſs than ſtrict Truth, as far at leaſt, as is poſſible.

Queſt. 3d, having the *principal Amount* and *Time*, to find the *Rate* (according to which it has amounted to ſo much, in that Time.) **Rule**, Subſtract the *Principal* from the *Amount*, the Remainder is the *Intereſt* alone; then ſay by the *Rule* of *Five*, if that *Principal* in that *Time*, give that much *Intereſt*, What will 100 *l.* in *one Year*? (this is very plain.) *Example*, If 150 *l.* amount to 168 *l.*

168 *l.* in two Years, (which is 18 *l.* of *Intereſt*) What is the Rate of *Intereſt* to 100 *l.* in one Year,

State *Lib. Years* *Lib.* *Lib. Years*

150 —— 2 —— 18 —— 100 —— 1 *Anſwer, 6 Libs.*

Queſt. 3d, Having the *Principal*, *Amount*, and *Rate of Intereſt* given, to find the *Time*, (in which that *Principal* at that *Rate*, makes that *Amount.*) Rule ſubſtract the *Principal* from the *Amount* (as in the laſt *Queſt.*) the Remainder is the whole *Intereſt*; then ſay by the *Rule* of *Five*, if 100 *l.* give the propoſed *Rate* (as 6 *l.*) in 1 Year; In what *Time*, will the given *Principal* (ſuppoſe 150 *l.*) yield the foreſaid Difference, *i. e.* the *Intereſt*? (Suppoſe 18 *l.* as if the *Amount* had been 168 *l.* the Anſwer is 2 Years.

The State is very plain, but take care you do not fancy the State ought to be thus, *viz.* 100 — 106 — 1 *Year* — 150 — 168; for tho' the *Principal* and *Intereſt*, or *Amount*, are proportional (in equal *Times*:) Alſo the *Intereſt* and *Times* are proportional (for the ſame principal Sum); yet the *Amounts* and *Times* cannot be in *Proportion*, ſince the principal Sums are independent of, and not in *Proportion* to the *Times*, in which theſe *Intereſts* ariſe, that make up the *Amounts* with diſproportioned principal Sums: For Illuſtration, let us try the firſt *ſingle Operation* of ſuch a State of the laſt Queſtion; it can be found no other Way than this, if 100 *l.* in 1 Year amount to 106, in what Time will 150 *l.* Principal amount to the ſame 106 *Lib?* Which is Nonſenſe; for 150 *l.* is at preſent worth more; and inſtead of 150 *l.* take 50, the Anſwer would be 2 Years, which is very abſurd, that 50 *l.* in 2 Years ſhould amount to 106, when it can only amount to 56: But to have done, we ſee a plain diſtinct Senſe in the State of this Queſtion, as I have given it in the *Rule*. The ſame Obſervation holds in *Queſtion* 1ſt, where by the State there directed, we do not find the *Amount*; but the *Intereſt* which being added to the *Principal*, makes the *Amount*.

Consequence, We have now gained a certain and intelligibe *Rule*, for performing what is ordinarly called,

Equation of Payments.

That is, when ſeveral Sums are due at ſeveral Terms of Payment, what is the Time, at which they may be all paid in one Payment, without Loſs to either Giver or Receiver? Rule, Find the preſent Worth of each Sum according to its Time, by *Queſtion* 2d preceeding, add all theſe together, ſubſtract the Sum from the Total of the Debts, the Remainder is plainly the Total of the *Intereſt* diſcounted, had theſe preſent Worths been now paid: Therefore, what we do next, is manifeſt, *viz.* by *Queſtion* 4th preceeding, ſay, if 100 *l.* give 6 *l.* (or any other Rate by which the foreſaids Diſcompts were made, for they muſt be all made at one Rate in order to this Queſtion) in 1 Year; in what Time will the Sum of the preſent Worths, give the foreſaid Difference or Intereſt, (which with theſe preſent Worths, make up the Sums due.)

Example,

Example, There is 61 *l.* 16 *ſh.* due at 6 Months, 50 *l.* 13 *ſh.* 4 *d.* at 3 Months, at what Time may they be paid at once, rebating 6 *per Cent?* 61 *l.* 16 *ſh.* at 6 Months, is worth ready Money 60 *l.* and 50 *l.* 13 *ſh.* 4 *d.* at 3 Months, is worth 50 *l.* the Sum is 110 *l.* both the Debts are 112 *l.* 9 *ſh.* 4 *d.* the Difference of this and the preſent Worth, is, 2 *l.* 9 *ſh.* 4 *d.* Therefore I ſay, if 100 *Lib.* give — 6 *l.* in 1 Year, in what Time will — 110 *l.* give — 2 *l.* 9 *ſh.* 4 *d.* Anſwer, 4 Months, 14 Days, (with a *Fraction* of 1 Day.) *Note,* in all this *Example,* I have taken 12 Months for 1 Year, and 30 Days to 1 Month.

§ II. *Compound Intereſt.*

WHEN any principal Sum is lent at *Intereſt,* for the firſt Year you have *ſimple Intereſt* for your *Principal;* but if the firſt Years *ſimple Intereſt* be accumulate with the *Principal,* and the Sum taken as a new *Principal,* to bear *ſimple Intereſt* the ſecond Year, that is called *Compound Intereſt,* (as to the firſt *principal Sum)* or *Intereſt* upon *Intereſt*; let that 2d Years *Intereſt* be added to the laſt *Principal,* and then a 3d Years *Intereſt,* and ſo on; There are the ſame Things to be noticed here as in the former, *viz.* the *Principal, Amount, Time,* and *Rate of Intereſt.*

Queſt. 1ſt, Having the *Rate of Intereſt, Time* and *Principal,* to find the *Amount,* Rule, Find by the *Rule of Three,* 1 Years *ſimple Intereſt* of the given *Principal,* at the given *Rate,* which add to the *Principal;* then find 1 Years *Intereſt* of this Sum at the ſame Rate, which accumulate into one, and find another Years Intereſt of the laſt Sum, and ſo on continually, till you have made as many *Operations,* as there are Years (and if there is any odd Part of a Year, it will alſo be another *Operation);* the laſt *Intereſt* found added to the laſt *Principal,* for which it was calculate, is the *Amount* ſought.

Note, You need not have theſe *Additions,* if you ſay as 100 to 106 (or whatever the *Rate* is) ſo is the given *Principal,* to its *Amount* for one Year. Again, as the ſame 100 to 106, ſo the firſt Years *Amount* to the 2d, and ſo on.

The Reaſon of this *Rule* is plain, from the *Definition* given of *Compound Intereſt.*

Example, What will 150 *Lib. Principal* amount to in 7 Years, allowing *compound Intereſt* at 6 *per Cent.* ſay 100 — 106 — 150 — 159 *l.* the firſt Years *Amount;* then 100 — 106 — 159 — 168 *l.* 10 *ſh.* 9 *d.* (neglecting the *Fraction)* the 2d Years *Amount.* Again, 100 — 106 — 168 *l.* 10 *ſh.* 9 *d.* — *&c.* thus you may proceed thro' them all.

Queſt. 2d, Having the *Amount, Time,* and *Rate of Intereſt,* to find the *Principal* (or preſent Worth of that *Amount,* due at that Time.)

Rule, You muſt work juſt backward, one *Operation* for every Year, and the odd Part of a Year, thus, as 106 — 100 *l.* ſo the given *Amount* to the preſent Worth or Principal for one Year. Again, 106 — 100; ſo the laſt

Anſwer

Anſwer to a 4th *Term*, which is the preſent Worth or Principal forborn two Years, and ſo on, *&c.* you'll come at laſt to the Anſwer ſought.

Obſerve, Theſe two *Queſtions* of *compound Intereſt*, are tedious Works; but I could give no other *Rule* here, that would have been underſtood upon any Prineiple of *Arithmetick*, hitherto delivered by me; and for the ſame Reaſon, I omit the other two Queſtions, *viz.* of finding the Rate and Time, which indeed are of leſs Uſe; I ſhall take notice, that from the *Definition* of *compound Intereſt*, 'tis plain, the Principal, and the ſeveral Years amount gradually from 1 Year to two *&c.* make a *Geometrical Progreſſion*; and by the perfect Knowledge of the Properties of this Kind, any Queſtion whatever relating to *compound Intereſt*, may be ſolved; 'tis plain too, that any *principal Sum* with the *Amount* of every Year, at *ſimple Intereſt*, makes an *Arithmetical Progreſſion*, whoſe common Difference, is 1 Years *Intereſt* of the principal Sum: But for this Kind, as the 4 Queſtions above explained are the moſt uſeful; ſo alſo, the *Rules* delivered are more eaſy, than could be taken from the Properties of an *Arithmetical Progreſſion*, tho' there may be many other Queſtions raiſed upon this, that could be ſolved no other Way. In ſhort, whatever you find not here, either as to *ſimple* or *compound Intereſt*; and the whole Application of *Proportion* or *Progreſſion*, to the ſumming up, or finding the preſent Worth of *Annuities*, (and other *Queſtions* relating to them) both at *ſimple* and *compound Intereſt* have all been omitted, for the Reaſons abovementioned.

But as this Application of *Arithmetick* is very uſeful and curious both, I ſhall take this occaſion again to recommend to every Perſon, that has Opportunity, to acquaint themſelves a little with *Algebra*; a very little Time will furniſh one with as much as may be of great Service, in underſtanding the more difficult Parts of *Arithmetick*, ſuch as theſe mentioned, and give a Perſon ſuch Inſight into the *Nature of Numbers*, as will make them able to apply all the Parts of *Arithmetick*, with more Underſtanding, Certainty, and Readineſs: But if you are content with *Rules* and no *Demonſtration*, you'll find all the *Queſtions* concerning *Intereſt* and *Annuities*, with the *Rules* in Mr. *Hill*'s *Arithmetick*.

As to the *Applications* of *Arithmetick*, which follow, they are a Collection of *Queſtions* under different Heads; where you will ſee ſuch a Variety of, the *Application* of *Proportion*, ſtated from the plain Senſe of the Things, (without any *general Rule*, which they admit not) that by the Time you have gone thro' and conſidered them (with what has preceeded) I may juſtly reckon, you'll be very familiar with the *Uſe* of *Proportion*, and able to apply it in many Caſes, that are not to be found in this, or any other Book; and that can have no *general Rule*, but *common Senſe*.

Queſtions of Exchange of Money.

Caſe 1ſt. TO reduce foreign (or any *Species* of) Coin, into the *Standart*, *Denominations* of *Engliſh* Money having the Value of an *Unit* (or any other *Number*) of that Coin in *Engliſh* Money.

Example, In 742 *Piſtols,* at 17 *ſh.* 6 *d. per Piſtol,* how much *Engliſh* Money? State 1 *Piſtol* —— 17 *ſh.* 6 *d.* —— 742 *Piſtols.*

Caſe 2d, To reduce *Engliſh* Money to *Foreign,* knowing the Value of an *Unit* (or any other *Numbr*) of the *Foreign* in *Engliſh* Money.

Example, In 468 *lib.* 14 *ſh.* how many *Lewid'ors* at 19 *ſh.* 6 *d. per Lewid'or.* State 19 *ſh.* 6 *d.* —— 1 *Lewid.* —— 468 *lib.* 14 *ſh.*

Note, If there is any Remainder of this *Diviſion,* it is *Pence;* for the *middle Term* being 1, it becomes only a *Queſtion* of *Diviſion.* For by the plain Senſe of the *Queſtion,* as oft as 19 *ſh.* 6 *d.* (the Value of 1 *Lewid'or*) is found in 468 *l.* 14 *ſh.* ſo many *Lewid'ors* it contains; the Remainder is *Pence,* becauſe all is reduced to *Pence;* and that Remainder of *Pence,* is ſo much, that the 468 *l.* 14 *ſh.* is worth more, than the *Number* of *Lewid'ors* in the *Quote;* and ought therefore to be retained by him, who gives the *Engliſh* Money, and receives only that *Number* of *Lewid'ors.*

Caſe 2d, To reduce one foreign *Coin* to another, knowing the Value of an *Unit* (or any other Number) of each Kind, in *Engliſh* Money.

Example, In 48 *Lewid'ors* at 19 *s.* 6 *d.* a Piece, how many *Guilders* at 1 *s.* 10 *d.*

Rule, By *Caſe* 1ſt, reduce the 48 *Lewid'ors* to *Engliſh* Money thus, 1 *Lewidor* ——19 *s.* 6 *d.*——48 *Lewidors* —— Then by *Caſe* 2d reduce that *Engliſh* Money *(viz.* The Value of the *Lewid'ors)* into *Guilders;* and 'tis plain you have the *Anſwer.*

Now ſee theſe are but plain *Applications* of the *Rule of Three,* I ſhall add and ſtate a few more *Queſtions,* ſolved by very plain *Proportions;* and then you have ſufficient Inſtruction for any uſeful Queſtion.

Queſtion 1. A Merchant at *Amſterdam* delivered 150 *Guilders,* to receive for them at *London* 13 *l.* 15 *s.* what was 1 *Guilder* valued at in the *Exchange?* State 150 *Guilders*——13 *l.* 15 *s.*——1 *Guilder*——*Anſwer* 22 *d.*

Queſt. 2. A Merchant at *London* paid 400 *l. ſterl.* for the Value delivered at *Amſterdam* at 1 *l.* 13 *s.* 6 *d. Flemiſh,* for 1 *l. ſterl.* how much *Flemiſh* was delivered at *Amſterdam?* State 1 *l. ſterl.*——1 *l.* 13 *s.* 6 *d. Flemiſh*—— 400 *l.*

Queſt. 3. A Traveller would exchange 200 *Ducats* at 7 *s.* 4 *d. ſterl. per Ducat,* for *Dollars* at 4 *ſh.* 8 *d. per Dollar;* how many *Dollars* ought he to have? State 1*mo,* 1 *Ducat*—7 *s.* 4 *d.*—200 *Duc.*——*Anſwer* 17600 *d.* then ſay, 2*do,* 4 *s.* 8 *d.*—1 *Dollar*—17600 *d.*——*&c.*

Queſt. 4. A Merchant delivers a Bill of Exchange, payable at *London,* of 309 *l.* 8 *s. ſterl.* for which he received an equal Number of *Crowns* at 5 *s.* 6 *d. per Crown,* and of *Dollars* at 4 *s.* 5 *d. per* Piece; how many did he receive of each? *Anſwer* 624——for 'tis plain, if you add 5 *s.* 6 *d.* (the Value of 1 *Crown*) to 4 *s.* 5 *d.* (the Value of 1 *Dollar*) and (having reduced all to *Pence*) divide 309 *l.* 8 *s.* by the Sum, the *Quote* gives the true *Anſwer,* ſince as oft as the Value of a *Crown* and a *Dollar* is found in 309 *l.* 18 *s.* ſo many *Crowns* and *Dollars* it contains.

Queſt. 5. A Merchant would exchange 200 *l. ſterl.* he is offered *Crowns* for 5 *s.* a Piece, which are worth but 4 *s.* 8. *d.* or *Dollars* for 4 *s.* 6 *d.* which are worth but 4 *s.* 3 *d.* which of them ſhall he take to loſe leaſt; and how much will he loſe? Find how many *Crowns* at 5 *s.* alſo, how many *Dollars* at 4 *s.* 6 *d.* the 200 *l.* is worth; then find the total Value of theſe *Crowns* at 4 *s.* 8 *d.* (their real Worth) and of the *Dollars* at 4 *s.* 3 *d.* compare theſe two total Values, and you'll ſee upon which the greateſt Loſs is, for theſe, whoſe Value is greateſt are to be choſen; therefore, ſince you are to take that *Species*, on which there is leaſt Loſs, ſuppoſe it is the *Dollars*, compare their total Value (according to the true Worth 4 *s.* 3 *d.*) with 200 *l.* and you'll find how much you loſe by *Subſtraction.*

Obſerve, AFTER the ſame Manner are Queſtions to be ſolved of Reduction or exchanging *Weights* and *Meaſures*: I have given you *Examples* of the moſt uſeful, concerning *Coins*; but in Order to your learning how to reaſon upon the Senſe and Nature of a Queſtion, I add two more, one of *Coins*, another of *Meaſures*; which, tho' not of frequent Uſe, are worth the examining. I ſhall make the Method of ſolving them very clear, tho' I do not perform the Work, becauſe it requires the *Rules* of *Fractions*; therefore I propoſe here only to ſatisfy your Judgment in the Method; and when you know to work with *Fractions*, you'll eaſily perform it.

Queſt. 6. SUPPOSE I would exchange 500 *l. ſterl.* and am to receive *Crowns* at 5 *s.* 9 *d.* or 69 *d.* *Dollars* at 54 *d.* *Ducats* at 68 *d.* and *Peices* of *Eight* at 52 *d.* but for every 4 *Crowns* I am to receive 3 *Dollars*; for every 2 *Dollars*, 1 *Ducat*; for every 3 *Ducats*, 5 *Peices* of *Eight*; how many of each *Species* muſt I receive? For all Queſtions of this Kind, where the Number of each *Coin* is unequal, take this *Rule.*

SET down the Names of the *Species*, and under them the Number that expreſſes the Relation of the Numbers ſought of each to another, as here,——— then we muſt by a due *Application* of *Proportion*, take ſome one of the *Species*, and find how many of all the reſt (according to the given *Proportions*) muſt be taken for every one of that Kind; it is beſt therefore to chooſe that which is firſt in the *Table*, *viz.* *Crowns*, under it I ſet 1, then by the *Rule of Three*, ſay, as 4 *Crowns* — to — 3 *Dollars* — ſo is 1 *Crown* to $\frac{3}{4}$ *Dollars*, which ſet under the *Dollars*. Again ſay, 2 *Dollars* —— 1 *Ducat* —— $\frac{1}{2}$ *Dollrs* —— to —— $\frac{1}{3}$ *Ducat*, which ſet under the *Ducats*, then ſay, 3 *Ducats* —— 5 *Ps.* 8 — $\frac{3}{5}$ *Due.* — to — $\frac{15}{24}$ *Ps.* 8, which ſet under the *Ps.* of 8: And how many ſoever there are, go thro' them all in this Method: And 'tis plain, you have in the lower Column, ſtanding under every *Species*, the juſt Number, or Part, of every *Species* anſwering to 1 *Crown*. Then next you muſt take the Value of 1 *Crown*, and to it add ſo many Times, or ſuch a Part of the Value of one of each of the other, as the new proportional Numbers ſtanding under, do expreſs; by this Sum divide the *Sterling* Money exchanged; it is plain that the Quote is the true

	Crowns	*Doll.*	*Duc.*	*Ps.* 8
	4	: 3		
	2	: 1		
		3	: 5	
	1	: $\frac{3}{4}$	: $\frac{1}{3}$	: $\frac{15}{24}$

Number of *Crowns* (becauſe the Value of one *Crown* is in the *Diviſor*:) And alſo ſhews that there muſt be taken ſo many Times that Number or Part of each other *Species* that ſtands in the under Column (becauſe ſuch Number or Part of them are in the *Diviſor*;) conſequently if theſe proportional Numbers or Fractions in the under Column be multiplied by the *Quote*, the Products are the Number of each *Species* to be taken; which Product, if it is a proper *Fraction*, ſhews that there is only ſuch a Part of an *Unit* of that *Species* to be taken.

Queſt. 7. By knowing the *Proportion* of *Weight* or *Meaſure* of one Place to another, and of that to a 3d, and ſo on, to find the *Proportion* between the 1ſt and laſt Place.

Example, If 3 Yards at *A*, are equal to 2 Yards at *B*, and 5 Yards at *B* worth 7 Yards at *C*, and 1 Yard at *C* worth 2 at *D*; how many Yards at *A*, are equal to 4 Yards (or any other Number) at *D*. Order the Things given as in the following Table,———

	A		*B*		*C*		*D*
Yards	3	:	2				
			5	:	7	:	
					1	:	2
	1	:	$\frac{2}{3}$	:	$\frac{14}{15}$	:	$\frac{28}{75}$

Then find what Number at *B* is equal to 1 Yard at *A*, thus 3 Yard—2 Yard—1 Yard—to $\frac{2}{3}$ Yards at *B*, ſet theſe in the Table in the under Column; then find how much at *C*, anſwers to $\frac{2}{3}$ Yards at *B* (*i. e.* to 1 Yard at *A*;) thus 5 Yards—7 Yards—$\frac{2}{3}$ Yards—to $\frac{14}{15}$ Yards at *C*, the ſame Way you'll find $\frac{28}{75}$ (or 1 and $\frac{13}{75}$) Parts at *D*: Go thro' them all, be they ever ſo many, after this Manner; and the new proportional Numbers in the under Column, ſhew how much of each anſwer 1 Yard at *A*, conſequently theſe Numbers ſhew the Relation of each *Species* to one another, *i. e.* the Number under each Kind ſignifies, how much of that, is equal to that Number of every other that ſtands under it, (becauſe they are all equal to the the ſame Thing, *viz.* 1 Yard at *A*;) and therefore knowing thereby, not only the Relation of the firſt and laſt, but of each to another, we may find how many Yards of any of them anſwers to any Number of any other of them; and for the *Example* propoſed, *viz.* to know how many Yards at *A*, are equal to 4 Yards at *D*, we muſt ſay as $\frac{28}{75}$ Yard at *D*—to 1 Yard at *A*, (by the preceeding Table) ſo is 4 Yards at *D*—to $\frac{112}{75}$ Yards at *A*, that is, by Reduction of Fractions 7 Yards, and $\frac{37}{75}$ Parts of a Yard at *A*.

You may eaſily notice, That the Tables for both theſe Queſtions, are made by the ſame *Rule* and *Method*; but the proportional Numbers in the under Columns may be found a little eaſier. Thus,

In *Queſtion* 6, for 4 *Crowns* there muſt be 3 *Dollars*, therefore for 1 *Crown*, there muſt be $\frac{3}{4}$ Parts of a *Dollar*, and by the ſame Way (which gives no Trouble, ſince 1 is always the 3d Term of the *Proportion*) you'll find that for 1 *Dollar*, there muſt be $\frac{1}{2}$ a *Ducat*, for 1 *Ducat*, $\frac{5}{3}$ (or 1 and $\frac{2}{3}$) of a *Ps.* of 8, ſet them down in this Manner———

Cr.	*Doll.*	*Duc.*	*Ps.* 8
:	$\frac{3}{4}$:	$\frac{1}{2}$:	$\frac{5}{3}$:
1	: $\frac{3}{4}$:	$\frac{3}{8}$:	$\frac{15}{24}$

the under Column is thus made, ſince for 1 *Crown*, there is $\frac{3}{4}$ Part of 1 *Dollar*, and for 1 *Dollar* $\frac{1}{2}$ of 1 *Ducat*, therefore for 1 *Crown* there muſt be $\frac{3}{4}$ Parts of $\frac{1}{2}$ of a *Ducat*, and by the ſame Reaſon there muſt be $\frac{3}{4}$ Parts of $\frac{1}{2}$ of $\frac{5}{3}$ Parts of a *Ps.* 8. Theſe

Fractions

Fractions ſo connected with the Word, *Of*, ſignifying *Fraction* of a *Fraction*, are, *compounded Fractions*; and by the *Caſe 1ſt, of the Reduction of vulgar Fractions*, you find the *Rule* for bringing them to *ſimple Fractions*, to be this, *viz.* multiply all the *Numerators* (*i. e.* the uppermoſt Number of the *Fraction*) into one another, the Product is the *Numerator* ſought; and multiply all the *Denominators* (or undermoſt Numbers of the *Fraction*) and their Product is the *Denominator* of the *Fraction* ſought; and by this *Rule* you'll find the Numbers of the under Column in the foreſaid *Table* truly produced: The Reaſon for thus reducing a *compound Fraction* to a *Simple*, you muſt expect in its proper Place; ſo that your *Rule* in ſhort is, Having found and ſet down the *Ratio's* of the firſt Column in the Manner directed; to find the proportional Numbers to be ſet under each *Species* in the loweſt Column, having ſet 1 under the firſt *Species*; for the reſt you multiply the upper Numbers of all the *Ratio's* (in the 1ſt Column) preceeding that *Species* for which you ſeek a Number (proportional to 1 which is ſet under the firſt *Species*) and ſet that Product fractionally over the Product of all the under Numbers of the ſaid *Ratio's*.

THE Queſtion 7th done after this Method ſtands thus,

	A	*B*	*C*	*D*
	: $\frac{1}{3}$	: $\frac{7}{3}$	: $\frac{2}{1}$	:
Yard	1 : $\frac{2}{3}$	: $\frac{14}{15}$	: $\frac{28}{15}$	

Queſtions of Barter.

Queſt. 1. IF I give 4 Hogſheads of *Wine*, at 9 *l. per* Hogſhead; for *Raiſins* at 7 *d. per* Pound Weight; what Weight muſt I receive?

'TIS plain I muſt firſt find the whole Value of my Hogſheads, thus, *Hd. L. Hd. L.* Then ſay *d. pd. l.*

1 — 9 — 4 — 36 7 — 1 — 36 — work, and find the *Anſwer*.

Queſt. 2. IF I receive 17 Pints *Brandy*, *&c.* at 4 *s.* the Pint, for 28 Bolls of *Wheat*; what is 1 Boll ſold at?

1*mo*, *Pint ſh. Pints*

1 — 4 — 17 — 68 *s.* 2*do*, 28 *Bolls* — 68 *s.* — 1 *Boll* — *&c.*

NOTE, In all ſuch ſimple *Queſtions* of *Barter*; you muſt firſt find the Value of the known Quantity; and with this you'll find the Thing ſought by a ſecond *Operation*.

Queſt. 3. *A* and *B Barter* Goods, thus, *A* has 27 Yards Silk Stuff, worth 2 *s.* the Yard ready Money; but in *Barter* he will have 2 *s.* 3 *s.* *B* has Hats worth 7 *s.* the Piece ready Money, how many of them muſt he give to *A*, for his Silk Stuff? It is plain, that *B* may not be a Loſer, the Price of his Hats muſt be raiſed in Proportion as *A* has raiſed his Stuff, thus, ———

Sh. Sh. : *d. ſh.*

2 — 2 : 3 — 7 — the fourth found in *direct* Proportion, will be the raiſed

ſed Value of *B*'s Hats in *Pence*: and then, uſing theſe raiſed Values of *A* and *B*'s Goods, the Queſtion is of the ſame Kind with *Queſt.* 1ſt.

Queſt. 4. *A* hath 100 Yards *Camlet* at 16 *Pence per* Yard, ready Money; but he puts them away for 18 *d.* in *Barter* with *B*, taking of him *Stockings* at 5 *s.* per Pair, which are worth but 4 *s.* 6 *d.* ready Money; how many Pair *Stockings* muſt *B* deliver? And who gains, or how much by the Bargain? By the Method of *Queſtion* 1ſt, find how many Pair *Stockings* at 5 *s.* the Pair ought to be given for 100 Yards at 18 *d.* then calculating the Total Value of *A*'s 100 Yards at 16 *d.* alſo the Value of the Number found of *B*'s *Stockings* at 4 *s.* and 6 *d.* compare theſe two total Values, and you'll ſee who gains, and how much. This is all plain Work.

Queſtions about Loſs *and* Gain.

Queſt. 1. I Bought 14 *Stone* of *Suggar* for 120 *l.* and ſold the ſame for 135 *l.* What is the Gain on 100 *l.*? State, if 120—— gain 15——(the Difference of 135 and 120) what will 100 *l.* gain? *Anſwer* 12 *l.* 10 *s.*

Queſt. 2. I bought 18 Gallons of *Wine* for 12 *l.* how may I ſell 1 Gallon to gain 8 *l.* on the 100 *l.*? I find firſt what 1 Gallon coſt me, then ſay, as 100 ——108, ſo the *prime Coſt* of 1 Gallon, to what I muſt ſell it for. *Note*, If the Price of 1 Gallon is given inſtead of the total Value, then you ſave the firſt *Operation.*

Queſt. 3. Having ſold 11 Yards of *Cloth* for 4 *l.* 16 *s.* and thereby gained at the Rate of 10 *l.* on the 100 *l.* what was the *prime Coſt* of 1 Yard? Firſt I find what I receive for 1 Yard according to the Sale (and if that be given inſtead of the totall Value, then this Work is ſaved) thus 11 *Yards*—— 4 *l.* 16 *s.*——1 *Yard*,——*&c.* Again, 'tis plain, That as 110 to 100 *l.* ſo is the Value received for 1 *Yard* to its *prime Value*, for 110 is received for 100 by Suppoſition, and ſo the *Proportion* is clear.

Queſt. 4th, I bought Cloth for 17 *s.* a Yard ready Money, and ſold it immediately for 21 *s.* payable at 3 Months; What is gained on 100 *l.* in one Year at that Rate? Say by the *Rule of Five*, if 17 *s.*—in 3 Month—gain—4 *s.*—what 100 *l.* in one Year?

Note, It may fall out that the Seller may actually be a Loſer, tho' he ſell dearer than he bought, providing the Gain be leſs than the prime Coſt of his Goods would give of Intereſt, (according to the Law) for that Time which he truſts the Buyer; but Merchants take care of this.

Queſt. 5th, Having ſold at one Time, 1 Yard of Cloth for 11 *s.* and 6 *d.* I gain'd thereby at the Rate of 15 *l* on 100 *l.* I ſold 1 Yard of the ſame at another Time for 12 *s.* what is gain'd on 100 *l.* by that laſt Sale? Firſt, I find from the firſt Sale what one Yard coſt my ſelf, thus, 115 *l.*—to 110 *l.*—ſo 11 *s.* 6 *d.* to the prime Coſt of one Yard; then ſay, *as that* prime Value *is to* 12 *s.* (the Price of the 2d Sale) *ſo is* 100 *l.* to the Amount of it at that Rate:

—The

The Difference of 100 *l.* and the Amount, is the neat Gain, and by Calculation the Amount is 120 *l.* and consequently the Gain is 20 *l.*

NOTE, This Question is the same in the Sense and the Numbers given, as Mr. *Hill*'s 8th *Question of Loss and Gain*; which I observe, that you may not be led into a very gross Mistake, he has fallen into, in the stating of this Question; He states it thus all at once, *viz.* If 11 *s.* 6 *d.* (receiv'd, made) 15 *l.* (Gain on 100 *l.* what will) 12 *s.* (receiv'd, make?) His Answer is, but 15 *l.* and a *Fraction.* I can reckon this only an Oversight in Mr. *Hill*; you see plainly the distinct Parts of the Question duly stated, as I have directed, and if you would do it all at once, the *Proportion* must be 11 *s.* 6 *d.* — 115 *l.* — 12 *s.* it will give 120 *l.* the true Answer: The Reason of which is, that since 11 *s.* 6 *d.* and 12 *s.* which are the proper *Comparative Terms*, are the Amount of the prime Cost of one Yard, and the Gain of the respective Sales; the other two *compared Terms*, ought to be the Amount of 100 *l.* and its proportional Gain.

Questions of Tare *and* Trett.

BY *Tare* is commonly understood the Weight of the Chest or Bag, and such other Things that are weighted in Gross with the Goods contain'd, but whose Weight can be known separately: And therefore if it be substracted from the gross Weight, the Remainder is the neat Weight of the Goods alone. This is so plain as needs no Example.

BUT if that Weight of *Tare* is not known separately, but allowed at so much to every hundred Weight, (*viz.* 112 pound) of the Gross, then the neat Weight must be found by Proportion; thus, add the allowed *Tare* to the *Quantity* for which it is allowed, call the Sum *gross Weight*, and the other *Neat*; then having any other given neat Weight, or gross Weight, you may find, by the *Rule of Three*, the correspondent *Gross* or *Neat*, the Difference betwixt the *Gross* and *Neat*, is the *Tare* or *Allowance*; but the finding the *Gross* from the *Neat*, or *this* from *that*, is the material Question. I give no *Examples* of this, because it is the same with the following *Rule of Trett.*

Trett is an Allowance for *Dust*, *Waste*, *Refuse* or *Inlack* of Goods given at so much *per* hundred Weight; the *Rule* is therefore the same with the last *Case* of *Tare.*

Example, AT 7 Pound *Trett* to 112 *pd*, what is the neat Weight paid for, when there was receiv'd 268 *pd.* Gross? State. *Gross.* *Neat.* *Gross*,
119 — 112 — 268

Example, AT 5 *pd. Trett* to 112 *pd.* what gross Weight must be receiv'd when 84 *pd.* Neat was paid for? State *Gross*
112 — 117 — 84

NOTE, When *Tare* and *Trett* are both allowed, the *Tare* is first deduced, and the neat Weight is particularly called, in Merchants Stile, *Suttle* Weight; and the *Trett* is again deducted from the *Suttle*, and the Remains properly called neat Weight: But if only one of them (or both in one Allowance) is deduced, they use only the word *neat Weight.*

Example,

Example, THERE is 87 *pd.* Groſs receiv'd, out of which *Tare* is to be deducted at 4 *pd.* to 112, and *Trett* at 5 *pd.* to 112 *pd.* what is the neat Weight?

OPERATION.

1mo, *Groſs* 116 — *Suttle* 112 — *Groſs* 87

87

784
896

116) 9744 (84 *pd.* Suttle
928

464
464

2do, *Suttle* 117 — *Neat* 112 — 84 *pd.* Suttle

84

448
896

117) 9408 (80 *pd.*
936

048 remains
16

288
48

117) 768 (6 *Ounce*
702

66 Remainder
16

396
66

117) 1056 (9 *Dram*
1053

3 Remainder

Anſwer 80 *Pound* 6 *Ounce* 8 *Dram* Neat, neglecting the Remainder which is only the $\frac{3}{117}$ Part of a *Dram*.

Obſerve, THERE may be Allowances made on other Things beſides Weights; the Proportion for calculating is a general Rule in all Caſes, *viz.* add the Allowance to that Quantity (be it Yards or Gallons, *&c.*) to which it is given, and you may call them *Groſs* and *Neat* the ſame Way, and ſo ſolve any Queſtion, as before.

I have now finiſhed my deſigned Courſe of *Integral Arithmetick*; and ſhall, in the next Place, explain the *Arithmetick of Fractions*: But I muſt here obſerve to you, that having my Eye in all this, upon the Senſe and *Rationale* of the ſeveral *Rules* and *Practices*, I have been content with explaining theſe, and illuſtrating them by few *Examples*, leaving even the Calculation to your Exerciſe, after I have

have given a plain Rule, and the Reason of it: As to what I have done, I am perſuaded if attentively conſidered, you'll be in a better Condition to apply *Arithmetick*, than from the Aſſiſtance of mere *practical Rules*, where no Reaſon appears. If you think there is not Variety enough of *Examples*, I ſhall not ſay much more for this, than that I believe if you underſtand well what's here, you may read other Books of Practice with more Advantage: And yet I'm ready to think, I have given you here the moſt material and uſeful *Applications*; a very few excepted, that required other Principles to demonſtrate; but theſe are not of very common Occurrence.

CHAP. XII.
FRACTIONS.

§ I. *Definitions.*

Defin. 1. A Fraction is a Part or Parts of any Thing conſidered as a Whole.

IT has been already ſhown, That any Thing, (or Collection of Things) may be conceived as an *Unit* or *Integer*, which will be greater or leſſer as that Thing is; ſo that the Greatneſs or Littleneſs enters not within the Idea of *Unity*, which is only a particular Way of conceiving a Thing or Collection of Things, as one or alone of that Kind; therefore we may conceive that ſame *Unit* to be made up of, or divided into any Number of equal Parts, each whereof are *Units* of their Kind, to which if we give new Names, they are as properly *Integers* as the other, tho' leſs; ſo 1 *l.* is equal to 20 *s.*: But, if we conſider theſe *Units* relatively, as Parts of the former *Integer*, and expreſs them (not by new Names, but) in their relation to that Whole; as if we call 8 *s.* $\frac{8}{20}$ Parts of 1 *l.*; this is called a **Fraction**, which we ſee plainly from this Explication, is always one or more of the ſame aliquot Parts of its Whole: For it ſuppoſes an *Unit* or *Whole* to be divided into a certain Number of equal Parts, and then expreſſes 1 or more of ſuch Parts, as $\frac{1}{20}$ or $\frac{7}{20}$ of 1 *l.* (or any other Thing.)

2. IN every *Fraction* there are two remarkable Parts, *viz.* the Number expreſſing how many equal Parts the *Integer* contains, called the **Denominator**, (and is always ſet undermoſt) becauſe it denominates the relative Value of each *Unit* of the other, *i. e.* ſhows what Parts of the *Integer* each *Unit* of that other is; which is called the **Numerator**, (and ſtands uppermoſt) becauſe it expreſſes a certain Number of theſe Parts, *Example*, $\frac{8}{12}$ Numerator. Denominator.

3. 'Tis plain then that the *Numerator* ought to be leſs than the *Denominator*, to make a proper *Fraction* or *Part*. If the *Numerator* is equal to, or greater than the *Denominator*, that is called an improper Fraction; particularly, if 'tis equal, the Value is exactly the *Integer*: So, if any *Integer* is divided into any Number of Parts, and the Whole taken as into 6 Parts, and 6 of them taken, $\frac{6}{6}$ is plainly the whole *Integer* or *Unit*: But if the *Numerator* is greater than the *Denominator*, as $\frac{7}{5}$, it is more groſly *improper*; for of 5 Parts you can never take 7; and the Senſe of ſuch a Fraction is this, *viz.* it expreſſes 7 Things (or leſſer *Units*) each of which is equal to a 5th Part of the ſame greater Thing conſidered as an *Integer* or *Unit*; and ſo of other *fractional Expreſſions*: For *Example*, 26 *s.* may be thus expreſſed, $\frac{26}{20}$ Parts of a *Lib.* Such Fractions are always greater than the *Integer* to which they are related, in proportion as the *Numerator* exceeds the *Denominator*; for 'tis plain, as oft as the *Denominator* is contain'd in the *Numerator*, ſo many *Units* are contain'd in that *Expreſſion*.

4. We may not only conſider a *Fraction* as a Part of an *Unit*, but as a Part of any other *Number* (by the 1ſt *Definition*) or *Collection* of *Units*, ſo $\frac{1}{4}$ Parts may be related either to 1, (or to any other *Number*, as) 4; in which Caſe, $\frac{1}{4}$ Parts are exactly 3; if you take any other *Number* as 7, and make it $\frac{3}{4}$ Parts of 7, to know what that is, is more difficult, and requires a particular *Rule*, of which afterwards; but we have no new *Species* of *Fractions* by this.

5. But again, we may take any *Fractional Expreſſion*, and conceive it as a Whole, which hath alſo its Parts; and if we expreſs any *Number* of them in fractional Relation to it, that makes a *compound Fraction*, or *Fraction* of *Fraction*; thus $\frac{2}{3}$ Parts of $\frac{3}{4}$ Parts of 1 *lib.* is 10 *ſh.* for $\frac{1}{4}$ Part is 5 *ſh.* and $\frac{3}{4}$ is 15 *ſh.* which being divided into 3 Parts, each of them is 5 *ſh.* and 2 of them 10 *ſh.* But the *Fraction* of 1, or any other *Number*, is called a *ſimple Fraction*; and ſo in the laſt *Example*, when 10 *ſh.* is expreſſed $\frac{2}{3}$ of $\frac{3}{4}$ *l.* it is *Compound*; but (tho' it be the ſame Thing) if we expreſs it thus $\frac{2}{3}$ of 15 *ſh.* it is a *ſimple Fraction*; ſo that the bare *Form* is all the Difference betwixt theſe *Two*; but that *compound Expreſſion* may be alſo turned to an equivalent *ſimple Fraction* of 1 *l.* as we ſhall ſee below.

Obſerve, From theſe *Definitions*, that *Fractions* are divided into *Simple* or *Compound*; and a *ſimple Fractions* is either *proper* or *improper*: As to *Compound Fractions*, tho' ſome of their Members be *improper*, that will not make the whole Expreſſion *improper*, when reduced to a *Simple* form, ſo $\frac{4}{5}$ of $\frac{5}{7}$ is equal to $\frac{20}{35}$ Parts by the *Caſe* 2d of *Reduction* below; therefore we do not conſider *Compound Fractions*, with the Diſtinction of *Proper* and *Improper*, becauſe that cannot be always known, till they are reduced to a *ſimple Form*; nor do we perform any *Operation* with them, till they are ſo reduced.

6. When an *Integer* has a *Fraction* of its *Unit* annexed, that is called a *mixt Fraction*, thus, 24 $\frac{3}{5}$ or 68 $\frac{3}{5}$ of $\frac{1}{4}$.

Consequence 1ſt, From the *Definition* of a *Fraction*, it is plain, that the greater the *Denominator* be (with the ſame *Numerator*) the leſſer is the Value of each *Unit* of the *Expreſſion* (*i. e.* of the whole *Fraction*) proportionally

onally; for 'tis certain, if any Integer is divided into 4 Parts, (for *Example*) each Part is twice as great as were it divided into 8 Parts; and ſo in any other Proportion: And contrarily, the leſſer *Denominator* is, the greater is the Value of the *Fraction*. Again, the *Numerator* being the proper *Number* of Things (directly expreſſed) it is evident, the greater it is (with the ſame *Denominator*) the greater proportionally is the Value of that *Fraction*; and contrarily, the leſſer *Numerator* is the leſſer *Fraction*, (*i. e.* a greater or leſſer *Number* of ſuch Parts.) And now it will follow,

2. That a *Fraction* is multiplied by multiplying its *Numerator*, or dividing its *Denominator*; but it is divided by dividing its *Numerator*, or multiplying its *Denominator*. Hence,

3. It is clear, that if the *Numerator* and *Denominator* of any *Fraction*, are multiplied or divided by the ſame *Number*, the *Product* or *Quotes* make a *Fraction* of the ſame Value with the former; becauſe, what the *Fraction* loſes or gains of its Value, by dividing or multiplying its *Numerator*, it contrarily gains or loſes as much by an equal dividing or multiplying its *Denominator*: So this *Fraction* $\frac{1}{5}$, if you multiply 5 by 4, it is 20; but it is plain $\frac{4}{20}$ Parts is 4 Times leſs than $\frac{1}{5}$, becauſe a 5th Part contains 4, 20 Parts, (ſince 4 Times 5 is 20,) but 3 multiplied by the ſame 4, is 12; and ſo $\frac{12}{20}$ is 4 Times greater than $\frac{3}{20}$, which being 4 Times leſs than $\frac{1}{5}$, it is evident $\frac{12}{20}$ is equal to $\frac{1}{5}$; therefore, if this *Fraction* $\frac{12}{20}$ be given, and both *Numerator* and *Denominator* dvided by (the ſame *Number*) 4, the new *Fraction* $\frac{3}{5}$ is equal to the former; therefore from the Nature of *Proportion*, it follows.

4. If two ſimple *Fractions* of the ſame *Integer* are of equal Value, and differently expreſſed, the *Numerators* are in *Proportion* to one another, as the *Denominators*; thus, let $\frac{1}{4}$ be equal to $\frac{15}{20}$, then 3 : 15 : : 4 : 20, or alternately 3 : 4 : 15 : 20, *i. e.* of all equal *Fractions*, the *Numerators* are in the ſame *Ratio* as the *Denominators*; this is alſo plain from the *Definition* of *Proportion*, which is an Equality of *Ratio*'s, *viz.* of the *Quotes* of the *Antecedent*, divided by the *Conſequent*. Wherefore, if the *Ratio* $\frac{3}{4}$ be equal to $\frac{15}{20}$, then 3 : 4 : : 15 : 20, are proportional; thus we have a Way to know if two propoſed *Fractions*, are equal or not, for turning them into *Proportionals*; if the *Product* of the *Extremes* and *Means* are equal, the *Fractions* are proportional, *i. e.* equal.

5. It has been already ſhown, that *Fractions* ariſe from imperfect *Diviſion*, when the *Dividend* is leaſt, or that there is a Remainder; for if 1 be given to be divided by 5 (for Example), the *Quote* is $\frac{1}{5}$ Part of 1, if the *Dividend* is double, triple, *&c.* ſo muſt the *Quote* be from the Nature of *Diviſion*; ſo that $\frac{1}{5}$ of 2 is equal to $\frac{2}{5}$ of 1; and $\frac{1}{5}$ of 3 equal to $\frac{3}{5}$ of 1, *&c*, that is, any *Fraction* referred to an *Unit*, is always equal to one ſuch Part (as the *Denominator* expreſſes) of the *Numerator*.

6. Any *Fraction* is in Proportion to 1, as its *Numerator* to the *Denominator*, *Example* $\frac{3}{5}$, I ſay, $\frac{3}{5}$: 1 : : 3 : 5, for the *Product* of the *Extremes* and *Means* muſt thus always be equal; one *Mean* being 1, and the other the *Numerator*, that *Product* is nothing but the *Numerator*. Again, one *Extreme* being the *Denominator*, if it multiply the *Fraction* in the *Numerator*, the *Product* is alſo e-

qual to the *Numerator*; for ſince 3 times 5 is the ſame as 5 times 3; therefore 5 times $\frac{1}{5}$ is the ſame as 3 times $\frac{1}{5}$, *i. e.* 3 times 1, or 3; or it will clearly follow from the *Definition* of *Proportion*, *viz.* an Equality of *Ratio's*, *i. e.* of *Quotes* of the *Antecedent* divided by the *Conſequent*: Now, if the firſt Term which is the *Fraction*, be divided by 1 (the 2d Term) the *Quote* remains the ſame without Change; but the 3d and 4th Terms are the *Numerator* and *Denominator* of the ſame *Fraction*; and conſequently their *Ratio* or *Quotes* the ſame Way taken, is the ſame *Fraction*.

THUS far I have made the *Nature* and *Theory* of *Fractions* clear; and therefore in demonſtrating and giving Reaſons for the following *Operations*, I ſhall have a ſhort Work, by referring to this Part.

§ II. *Reduction of Fractions.*

Obſerve, FROM what has been ſaid of the *Nature* of *Fractions*, we ſee that the *Numerator* is the Number of Things properly and directly expreſſed; for if I give you $\frac{3}{4}$ Parts of any Thing, 'tis giving 3 Things, each of which are equal to $\frac{1}{4}$ of that Thing; and this is the Number which, in all the practical Part, is propoſed to be added, ſubſtracted, *&c.* for tho' the *Denominator* repreſents to us a Number of Things (*viz.* which compoſe the *Integer*) yet I call it an *indirect Number*, becauſe it only expreſſes the Value of an *Unit* of the other: But different *Denominators* make the *Units* of the *Numerator* of different Values; and this is the Occaſion of the Difference between the *Operations* in *integral* and *fractional Numbers*; which laſt requires ſeveral Preparations in order to *Addition*, &c. which are contained in the following *Caſes of Reduction*.

Caſe 1ſt, TO reduce a *compound* Fraction to a *Simple* (having the ſame Value). Rule, Multiply all the *Numerators* continually, the Product is the *ſimple Numerator*; and the *Denominators* continually, their Product is the *ſimple Denominator* ſought. *Example*, $\frac{2}{3}$ of $\frac{3}{5}$, by the Rule it is $\frac{6}{15}$. *Reaſon* of this Rule is found in *Conſequence* 2d preceeding: For, when the Denominator 5, of the Fraction $\frac{3}{5}$, is multiplied by the other Denominator 3, the Product is 15, and $\frac{3}{15}$ is the $\frac{1}{3}$ of $\frac{3}{5}$, and therefore $\frac{2}{3}$ of $\frac{3}{5}$, muſt be 2 Times as much, *i. e.* multiply $\frac{3}{15}$ by 2, the Product makes the Fraction $\frac{6}{15}$. Another *Example*, $\frac{2}{3}$ of $\frac{3}{7}$ of $\frac{2}{13}$ equal to $\frac{12}{273}$ the Reaſon holds, however many ſimple Fractions compoſe it, becauſe it holds of any two of them.

Caſe 2. TO reduce an *improper* Fraction to its equivalent whole or mixt Number? Rule, divide the *Numerator* by the *Denominator*, the *Quote* is the whole Number ſought; and if there is a *Remainder*, it muſt be annexed Fraction-ways with the Diviſor, and makes the Anſwer a *mixt* Fraction. *Example*, $\frac{24}{8}$ equal to 3 (*viz.* 24 divided by 8) and $\frac{25}{8}$ equal to $3\frac{1}{8}$, and $\frac{8}{8}$ equal to 1. The *Reaſon* of the *Rule* is clear from *Definition* 3d preceeding; for when the *Numerator* and *Denominator* are equal, that Fraction is 1; therefore, as often as the

Numerator contains the *Denominator*, ſo many *Units* is the Fraction worth; and if there is a Remainder, it is clearly a Fraction over.

Caſe 3. To reduce a *mixt* Fraction to the Form of a *ſimple* Fraction. Rule, multiply the integral Part by the *Denominator* of the fractional Part, and to the Product add the *Numerator*; take this Sum for the *Numerator* ſought, which ſet over the foreſaid *Denominator*, and this is the *ſimple* Fraction required. *Example*, $4\frac{3}{7}$, is equal to $\frac{31}{7}$. The *Reaſon* of this *Rule* is clear from the laſt *Caſe*, for it is only the Reverſe of it.

Caſe 4. To reduce a whole Number to the Form of a Fraction. 'Tis plain we have nothing to do, but make 1 the *Denominator*. *Example*, 9 is $\frac{9}{1}$; but if it muſt be reduced to a Fraction, having a given *Denominator*, then it is plain, we muſt multiply it by that Denominator; thus, to turn 9 into the Form of a Fraction whoſe *Denominator* ſhall be 5, I multiply 9 by 5, and $\frac{45}{5}$ is the Fraction ſought.

Obſerve, From this laſt *Caſe* and the Firſt, we not only ſee the Truth of *Conſequence 5th*, but alſo we ſee how to turn the *Fraction* of any Number into a ſimple Form. *Example*, $\frac{1}{7}$ of 9 is $\frac{1}{7}$ of $\frac{9}{1}$; and by *Caſe* 1ſt $\frac{9}{7}$; and this may be the ſame Way inferred, as the other from *Conſequence 5th*.

Caſe 5. To reduce a *Fraction* of an *Unit* of a higher *Denomination* or *Value*, to the (equivalent) Fraction of an *Unit* of a lower Denomination. Rule, reduce the *Numerator*, as it were a whole Number, and continue the *Denominator*. *Example*, to reduce $\frac{6}{7}$ of a *l.* to the Fraction of a *s.* it is $\frac{6}{7}$ *s.* The *Reaſon* is plain; for the Fraction of 1 *l.* is 20 Times greater than the like Fraction of 1 *s.* becauſe 1 *l.* is 20 Times greater than 1 *s.* [*V. Propoſition* 1ſt, *Conſequence* 2d, *Geometrical Proportion*] and from the Nature of Fractions [*Conſequence* 2d preceeding] a Fraction is multiplied by multiplying its *Numerator*; ſo that if $\frac{1}{7}$ of a *s.* is 20 Times leſs than $\frac{1}{7}$ of a *l.* therefore $\frac{1}{7}$ multiplied by 20, makes $\frac{20}{7}$ *s.* equal to $\frac{1}{7}$ *l.*

Caſe 6. To reduce a Fraction of an *Unit* of a lower Denomination to the Fraction of an *Unit* of a higher. Rule, multiply its *Denominator*, by the known Relation of the ſeveral Denominations (*i. e. Pence* by 12, and *Shil.* by 20) and continue the *Numerator*. *Example*, $\frac{3}{4}$ *s.* is $\frac{3}{80}$ *l.* The Reaſon here is obvious too, for the Fraction muſt be divided, as in the laſt *Caſe* it was multiplied; but by the Nature of Fractions [*Conſequence* 2d preceeding] a Fraction is divided by multiplying its Denominator.

Obſerve, In this *Caſe* we have a Rule for reducing *Integers* of a lower Denomination to Fractions of a higher; for, we may put them in Form of a Fraction by *Caſe* 4th, and find the Anſwer by this Caſe. *Example*, 3 *Pence* is 1ſt, $\frac{3}{12}$ *d.* and by this Caſe it is $\frac{3}{240}$ *s.* and this again $\frac{3}{4800}$ *l.*

Caſe 7. To find the Value of a Fraction in *Integers* of a lower Denomination. Rule, reduce the *Numerator* (by *Multiplication*) to the ſaid lower Denomination; and divide the Product by the *Denominator*. *Example*, What is $\frac{3}{5}$ of a *l.*? 2 reduced to *s.* is 40, this divided by 3 gives 13 *s.* and 1 Remainder is $\frac{1}{3}$ *s.* which reduced again to *d.* gives 4 *d.* ſo the Anſwer is 13 *s.* 4 *d.* The *Reaſon* is very obvious, for $\frac{2}{3}$ of 1 *l.* is the ſame as $\frac{1}{3}$ Part of 2 *l.* (as has been frequently ſhown), and ſince 2 *l.* will not divide by 3, and give an *integral Quote*, it muſt

be

be reduced to a lower Denomination; or you may also take it in this View, *viz.* if $\frac{3}{5}$ *l.* is reduced to the Fraction of a *s.* by *Case* 5th, it is $\frac{12}{20}$, this being an improper Fraction, reduce it by *Case* 2d, and so on.

Case 8. To reduce two or more simple Fractions to one Denominator, *i. e.* to find as many new Fractions of the same Value respectively with the old, but which shall have all the same *Denominator*. Rule, multiply all the given *Denominators* continually, the Product is the common *Denominator* sought; then multiply each *Numerator* continually into all the *Denominators* except its own, that Product is the new *Numerator* correspondent to that old one, *i. e.* the new Fraction, which has this new *Numerator*, is equal in Value to the old one, whose *Numerator* is made use of in producing the said new one. *Example*, $\frac{2}{3}$ $\frac{3}{5}$ are equal to $\frac{14}{35}$ $\frac{15}{35}$. Again, $\frac{2}{3}$ $\frac{5}{7}$ $\frac{4}{11}$, are equal to $\frac{616}{1155}$, $\frac{825}{1155}$, $\frac{420}{1155}$. *Reason* of this *Rule* is manifest from *Consequence* 3d preceeding; for the *Numerator* and *Denominator* of each given Fraction is equally multiplied (in producing the new Fraction) *viz.* by all the other *Denominators*.

Observe, I have already in explaining the *practical Rule of Three*, shown, that two *simple Numbers* signifying any Kind of Thing, are not in the *Ratio* of the same *Numbers* absolute, unless they are of one *Species*; so 3 *l.* and 4 *sh.* are not as 3 to 4, but as 60 *sh.* to 4 *sh.* or 60 to 4 absolutely; the same Way in *Fractions*, The *Numerator* is properly and directly the *Number* of Things expressed: But to compare two Fractions together, they must not only be Fractions of the same *Unit*, but also have the same common *Denominator*; and then 'tis plain they are to one another, as the new *Numerators*; so $\frac{3}{4}$ *l.* and $\frac{2}{3}$ are $\frac{9}{12}$ and $\frac{8}{12}$ and consequently they are to one another, as 9 to 8,; therefore if two Fractions are proposed, to find whether they are equal, and what the Inequality is, we must reduce them to one *Unit*, by *Case* 5th or 6th, and then to one *Denominator*, by *Case* 8th. In fine, we may draw this one *general practical Rule*, for all *Operations* in Fractions, *viz.* Let all the Fractions belong, or be reduced to the same *Unit*, and then to one *Denominator*; if you *add*, *substract*, *multiply*, or *divide* the new *Numerators*; the Sum, Remainder and Product of these *Numerators*, set fractionally over the common *Denominator*, is the *Number* sought. But in *Division* you have no need to regard the common *Denominator* any more, but take the *Quote* (completed with the Remainder, set fractionally over the *Divisor* of the Work) for the *Quote* sought: But this general *Rule*, in too many *Cases* which occur, would be very tedious, therefore we must consider each *Operation* by it self, that we may take the Advantage of the best Way in which the Thing can be performed: But there is a remaining *Case* of *Reduction*, to be first explained.

Case 9th, To reduce a simple Fraction to an equivalent one, but expressed in lower *Numbers*, and even in the least possible? I have shown already, that two Fractions may be differently expressed, and yet be of the same Value, by a Proportionality of their *Numerator* and *Denominator*, see *Conseq.* 3d preceeding; by which it is plain, if we can discover a *Number* that will divide both *Numerator* and *Denominator*, without a Remainder, the *Quotes* make a new Fraction equal to the former, and in lesser Terms; thus $\frac{12}{15}$ if *Numerator* and

Denominator are each divided by 15, the *Quotes* make $\frac{1}{2}$ equal to the other. We may very oft at Sight discover such a *Number*; for if the *Numerator* and *Denominator* given have 5 or 0 in the Place of *Units*, then 5 will divide both, if both have an equal *Number* of 0's, then cut them all off, for thus you divide both by 10, 100, *&c.* if they are any even *Numbers*, they will divide by 2, and the new *Quotes* again perhaps by 2: But to reduce the Fraction to the least Term possible, we must find the greatest *Number* that will divide the *Numerator* and *Denominator* both, without a Remainder (for it is plain, the greater *Divisor*, the lesser *Quote*; consequently, the greatest *Divisor* has the least *Quote* possible.) **Rule**, divide the *Denominator* by the *Numerator*, and the last *Divisor* by the last Remainder, constantly till 0 remain; and the last *Divisor* is the greatest *Divisor* or common Measure, that will divide both *Numerator* and *Denominator* without a Remainder; therefore it is plain, if the last *Divisor* is 1, the proposed Fraction is irreduceable, for 1 will leave them as they are, and 1 being the greatest common Measure, and the least of integral *Numbers*, it is plain, they can have no other lesser Expression.

EXAMPLE 1st.

$\frac{7}{27}$

OPERATION.

7) 27 (3 This Case is irreduceable
21
---
6) 7 (1
6
---
1) 6 (6
6

0

EXAMPLE 2d.

$\frac{1625}{11410}$

OPERATION.

1625) 11410 (7
11375
---
35) 1625 (46
140

225
210
---
15) 35 (2
30
---
5) 15 (3
15

00

Now

Now 5 being here found the greateſt common *Diviſor* or *Meaſure*; by it divide both *Numerator* and *Denominator*, thus,

Numerator,	Denominator,
5) 1625 (325	5) 11410 (2282
15	10
12	14
10	10
25	41
25	40
0	10
	10
	0

So the *Fraction* ſought is $\frac{325}{2282}$ the loweſt *Expreſſion* that is equal to $\frac{1625}{11410}$

REASON of this *Rule*, There remains to demonſtrate the *Rule* for finding the greateſt common *Meaſure* or *Diviſor* to the *Numerator* or *Denominator*, (*i. e.* to any two given Numbers) which I do thus, — what a *Multiple* is, we have ſeen defined in Diviſion, *viz.* a Number which contains another, a certain Number of times without a Remainder. Having this premiſed, the Demonſtration will be built on the following *Propoſitions*: 1*ſt*, Every Number Meaſures, or is contained in it ſelf exactly once; this is ſelf evident, and from the Definition 'tis evident it meaſures all its own *Multiples*. Hence follows 2*do*, That Number which meaſures, *i. e.* divides another exactly, will meaſure all the *Multiples* of that other; for, becauſe that other meaſures its own *Multiples*, and is it ſelf a *Multiple* to the firſt, its *Multiples* are therefore *Multiples* of the firſt, which conſequently will meaſure them all. 3*tio*, In Diviſion 'tis plain if there is no Remainder, the *Dividend* is multiple of the *Diviſor*; but if there is a Remainder, this will hinder it being ſo; and if this Remainder is taken away from the Dividend, then, what remains here is a *Multiple* of the *Diviſor*; and therefore ſuch Dividends are compoſed of, or equal to, a certain multiple of the *Diviſor* and the *Remainder*. From what is already ſaid, follows 4*to*, If the *Remainder* in *Diviſion* be an exact *Meaſure* to the *Diviſor*, it muſt be ſo alſo to the *Dividend*, (which is compoſed of that *Remainder* and a multiple of the *Diviſor*.) Again, there follows clearly 5*to*, Whatever *Number* is an exact *Meaſure* to the *Diviſor* and *Remainder*, will be ſo alſo to the *Dividend*: (which is compoſed of that *Remainder* and a multiple of the *Diviſor*) Now hence the Demonſtration of the *Rule*: Conſider the *Operation* when the *Remainder* is 0, the *Diviſor* is Remainder of the preceeding *Diviſion*, and the *Dividend* is the *Diviſor* of the ſaid preceeding *Diviſion*; therefore, by *Article* 4th, that *Diviſor* (or *Remainder*) will alſo divide the preceeding *Dividend*. But in each Diviſion except the 1ſt, the Diviſor and Dividend, are the Remainder and Diviſor of the preceeding Diviſion; there-

therefore, by *Article* 5th, That which measures the Divisor and Dividend of the last Division except one, must measure the Divisor and Dividend of all the Operations, and consequently will measure the Numerator and Denominator of the given Fraction, which is the first Part to shew that the last Divisor is an exact Measure to both. But to shew that it is the greatest common Measure, consider *Example* 2d in the last Division but one, if 15 could measure 35 exactly it were the greatest that could measure both it self and 35, but there is a Remainder 5: Now, whatever measures them both, must also measure the Remainder, (which is a Part of the *Dividend*), this Remainder 5, measures the preceeding *Divisor* 15, and it self, consequently it measures the preceeding Dividend 35, (composed of a *Multiple* of 15 and 5) but it is the greatest that can measure it self, and so the greatest common Measure to 15, 35 and 5; and consequently to 35 and 1625, also to 1625 and 11410; (*i. e.* to the *Numerator* and *Denominator*) for by the 1st Part 5 measures all these. Now, tho' I have taken a particular *Example*, yet you can see the Universality of the Reason in every Case: For it depends on the *general Nature of Division*, as contain'd in the preceeding *Propositions*, and not in the particular *Numbers* adduced for Examples.

§ III. *Addition of Fractions.*

Rule, ALL the *Fractions* being *simple proper Fractions* of the same *Unit*, or made so by *Reduction*, they must all be reduced to one common *Denominator*; then add the new *Numerators*, annex the Sum fractionally over the common *Denominator*, and you have the fractional Sum sought; which, if it is an improper *Fraction*, reduce to its equivalent *Whole* or *mixt Number*.

I need say little about a Reason of this *Rule*; the Thing is it self evident, for the *Fractions* being prepared as in the *Rule*, the *Units* of all the *Numerators*, are of the same Value, whose Sum is the true Answer, or Number of such Parts, as the common *Denominator* signifies.

Example, Add $\frac{3}{5}$ *l.* $\frac{4}{5}$ *l.* and $\frac{4}{7}$ *l.* By Reduction they are equal to $\frac{420}{1050}$ $\frac{630}{1050}$ $\frac{750}{1050}$ the Sum is $\frac{2055}{1050}$ equal by Reduction to $1\frac{1005}{1050}$; the fractional Part of this Sum, by *Case* 7th of *Reduction*, is found to be 19 *s.* 7 *d.* $1\frac{75}{105}$ *Farthings.*

Example, Add $\frac{2}{5}$ *l.* and $\frac{6}{7}$ *s.* I reduce $\frac{2}{5}$ *l.* it is $\frac{40}{5}$ *s.* which may be added by the *Rule* to $\frac{6}{7}$ *s.* but 'tis better to reduce the $\frac{40}{5}$ *s.* it is $6\frac{5}{7}$ *s.* Now I add the $\frac{5}{7}$ *s.* and the $\frac{6}{7}$ *s.* by Reduction they are $\frac{42}{63}$ and $\frac{54}{63}$, the Sum $\frac{96}{63}$ being reduced, it is $1\frac{33}{63}$ *s.* this added to the former 6 *s.* makes 7 *s.* and $\frac{33}{63}$ Parts, whose Value being found it is 6 *d.* $1\frac{42}{63}$ *Farthing.*

NOTA, Where the *Example* has *mixt Fractions*, add the *Integers* in the common Form, and the Fractions being added as above, add their Sum to the Sum of the *Integers*.

Example, L. 24 $\frac{3}{4}$ the *Fractions* reduced are $\frac{11}{28}$: $\frac{20}{28}$: Sum $\frac{41}{28}$ *l.* equal to 1 *l.* 9 *s.*
105 $\frac{5}{7}$ 3 *d.* 1 *f.* $\frac{20}{28}$ Parts, or $\frac{5}{7}$ by *Case* 9th *Reduction.*

129	*ſh.*	*d.*	*f.*		Sum of the *Integers.*
1 :	9 :	3 :	1 :	$\frac{5}{7}$	Sum of the *Fractions.*
130 :	9 :	3 :	1 :	$\frac{5}{7}$	Total Sum ſought.

§ IV. *Subſtraction of Fractions.*

Rule, THE *Subſtracter* and *Subſtrahend* being both *ſimple proper Fractions* of the ſame *Unit*, or made ſo by Reduction, let both be reduced to one *Denominator*; the Difference of the new *Numerators* ſet fractionally over the common *Denominator*, is the fractional Anſwer ſought. The Reaſon of this is obvious, as in *Addition*, becauſe the *Units* of the new *Numerators*, are all of the ſame Value.

Example, $\frac{3}{5}$ *l.* from $\frac{2}{3}$ *l.* By Reduction, $\frac{27}{45}$ from $\frac{30}{45}$ Remainder $\frac{8}{45}$ *l.* Value by Reduction is 6 *s.* 4 *d.* 3 *f.* $\frac{5}{15}$ or $\frac{1}{3}$ Part.

Example, $\frac{3}{4}$ *s.* from $\frac{5}{7}$ *Lib.* By Reduction is $\frac{3}{4}$ *s.* from $\frac{140}{7}$ *s.* and being reduced to one *Denominator*, they are $\frac{21}{28}$ and $\frac{400}{28}$, Remains $\frac{379}{28}$, this again by Reduction is equal to 13 *s.* 6 *d.* 1 *f.* $\frac{20}{28}$ Parts or $\frac{5}{7}$.

Obſerve, THERE are many Caſes that occur in *Subſtraction*, that may be done eaſier than going thro' all the Conditions of the *general Rule*; that is, when the *Subſtracter* and *Subſtrahend*, or one of them, is a whole Number or mixt Number, and the other Mixt or a Fraction. **Rule,** If there be a *Fraction* in both *Subſtracter* and *Subſtrahend*, theſe *Fractions* muſt be reduced by the *general Rule*: Set *whole Numbers* and *Fractions* diſtinctly each under its Kind, and ſubſtract *Fraction* from *Fraction*, *i. e.* the *Numerators*, and if the *Numerator* of the *Subſtrahend* is leaſt, add *Unity* to it, *i. e.* the *Denominator*; for by the Nature of Fractions, the *Denominator* is the *Integer*, and being added to the *Numerator*, encreaſes its Value by *Unity*; and therefore if the *Subſtrahend* is a *whole Number*, ſubſtract the *Numerator* of the *Subſtracter* from the *Denominator*, as an *Unit* borrowed to the *Subſtrahend*, and for that add 1 to the firſt Place of the *Integers*, for the ſame Reaſon as in *whole Numbers*. The following *Examples* will make all this clear and plain.

EXAMPLE 1ſt.	*EXAMPLE* 2d.	*EXAMPLE* 3d.	*EXAMPLE* 4th.
7 $\frac{3}{5}$ or 7 $\frac{8}{12}$	24 $\frac{3}{4}$ or 24 $\frac{27}{36}$	35 $\frac{7}{11}$	246 *l.*
4 $\frac{3}{4}$ or 4 $\frac{9}{12}$	9 $\frac{5}{9}$ 9 $\frac{20}{36}$	7	$\frac{13}{29}$ *l.*
Remainder 2 $\frac{11}{12}$	Remainder 15 $\frac{7}{36}$	Remainder 28 $\frac{7}{11}$	245 $\frac{16}{29}$

EXAMPLE 5th.	*EXAMPLE* 6th.
9 $\frac{5}{7}$ *Yards* 9 $\frac{25}{35}$	7 *Bolls*
$\frac{4}{5}$ or $\frac{28}{35}$	2 $\frac{3}{5}$
Remainder 8 $\frac{32}{35}$	Remainder 4 $\frac{2}{5}$

§ V.

§ V. *Multiplication of Fractions.*

Rule, MULTIPLIER and *Multiplicand* being both *Fractions*, or *mixt*, or one a *whole Number*, and the other a *Fraction* or *mixt*, let both be reduced to the Form of a *Fraction*; then, multiply the two *Numerators*, the Product is a new *Numerator*; also the two *Denominators*, their Product is *Denominator*, and this *Fraction* is the Product sought.

Example, $\frac{2}{7}$ by $\frac{3}{5}$ Product is $\frac{6}{35}$.

REASON of this *Rule*; If you multiply the *Numerator* of the *Multiplicand*, by the *Numerator* of the *Multiplier* the Product is $\frac{6}{7}$ and this is the true Product, if the *given Multiplier* had been 3, but because it is $\frac{1}{5}$ of 3 *(i. e.* $\frac{3}{5}$ of 1*)* therefore, of that Product $\frac{6}{7}$ you must take but the 5th; which is done by multiplying the *Denominator* by 5; and the Product sought is $\frac{6}{35}$; this is all plain from what is already demonstrated of the *Nature of Fractions*, and is a *general Reasoning* for all *Cases*.

Observe, 'TIS plain from the *Nature of Multiplication*, and of *Fractions* compared, that to multiply any *Number* by a *Fraction*, you actually diminish it, and the Product will be less than the *Multiplicand*; for since *Multiplication* imports the taking any Number a certain Number of Times, if the *Multiplier* is a *Fraction*, *(i. e.* expresses only a Part of an *Unit* or *Time)* then, the Product must only be such a Part of the *Multiplicand*; thus 4 by $\frac{2}{3}$ produces only $\frac{8}{3}$ or $2\frac{2}{3}$; so that *Multiplication* turns into the Reduction of a *compound Fraction* to a *Simple*; for to multiply $\frac{3}{7}$ by $\frac{2}{3}$ is to take $\frac{2}{3}$ of $\frac{3}{7}$, which by *Case* 1st of *Reduction* is $\frac{6}{21}$: and this shows the *Reason* of the *Rule* in another View.

Example 2d, 426 by $9\frac{1}{4}$; by *Reduction* it is $\frac{426}{1}$ by $\frac{37}{4}$, Product $\frac{16614}{4}$ which reduce as you please.

Example 3d, 36 by $\frac{5}{9}$ Product $\frac{180}{9}$.

Example 4th, $4\frac{2}{7}$ by $3\frac{9}{12}$ or $\frac{30}{7}$ by $\frac{45}{12}$ Product $\frac{1350}{84}$.

Example 5th, $6\frac{3}{7}$ by $\frac{2}{5}$ or $\frac{45}{7}$ by $\frac{2}{5}$ Product $\frac{90}{35}$.

Example 6th, 14 *l.* 19 *s.* $9\frac{2}{3}$ *d.* by 6. In such Cases where the *Multiplicand* is a *mixt Number*, with a *Fraction* of the lowest *Species*, the *mixt Number* must be all reduced to that lowest; and then is it a *mixt Fraction* of that lowest, with which proceed as in other *Cases*.

NOTA, The same Thing holds true here as was explain'd of *whole Numbers*, *viz.* that the *Multiplier* is an *absolute Number*: But as I said in another Place, when such absurd Questions are proposed; for *Example*, to multiply 4 *l.* 10 *s.* by 5 *l.* 8 *s.* the Product is expected as if the Question were qualified to an *Unit* of the highest *Denomination* of the *Multiplier*: Therefore, in this Sense, you may perform all such *Operations*, by turning all the *Integers* of the lower *Species*, into *Fractions* of the higher, and sum up all these *Fractions*; which Sum, with the *Integers* of the highest *Denomination*, if there be any, makes a *mixt Fraction*; and then multiply by the *Rule of Fractions*: Thus, the foresaid *Example* is $4\frac{1}{2}$ *l.*

by $5\frac{8}{10}$ *l.* now, since we are to find a Number of *Libs.* so proportioned to $4\frac{1}{2}$ *l.* as $5\frac{8}{10}$ to 1 *l*; the State is 1 *l.* — $5\frac{8}{10}$ — $4\frac{1}{2}$ resolv'd by *Multiplication.* Also, 3 *l.* 10 *s.* by 7 *l.* 13 *s.* 4 *d.* is $3\frac{1}{2}$ by $7\frac{2}{3}$ that is $\frac{7}{2}$ by $\frac{23}{3}$ Product $\frac{161}{6}$ or $26\frac{5}{6}$ *l.*

§ VI. *Division of Fractions.*

Rule, IF a *Fraction* be in either, or both *Dividend* or *Divisor*, reduce them both to the Form of a simple Fraction; which must both belong to the same *Unit*, or be reduced to this State: Then multiply the *Numerator* of the *Dividend*, by the *Denominator* of the *Divisor*, the Product is a new *Numerator*: Then multiply the *Numerator* of the *Divisor*, by the *Denominator* of the *Dividend*, the Product is a new *Denominator*, and this Fraction is the *Quote* fought.

Example 1st, *Divisor* $\frac{2}{3}$ *Dividend* $\frac{3}{4}$ *Quote* $\frac{9}{8}$ equal to $1\frac{1}{8}$.

THE *Reason* of this *Rule* is, since all *Division* returns in its Sense to this, *how oft one Number is contained in another*; it is plain, if we enquire how oft 2 is contained in $\frac{3}{4}$ we are in effect to take $\frac{1}{2}$ of $\frac{3}{4}$ *viz.* $\frac{3}{8}$ Part; but because we do not enquire how oft 2 but $\frac{1}{3}$ of 2, (*i. e.* $\frac{2}{3}$ of 1) therefore, the *Quote* must be 3 Times as much; for $\frac{1}{3}$ of 2, is three Times less than 2; and so the *Quote* $\frac{3}{8}$ is three Times less than just, which is restored by multiplying it by 3, and it is $\frac{9}{8}$ (or $1\frac{1}{8}$.) There is a Difficulty to be explained here, *viz.* why I restrain all the Sense of *Division* to that, of finding how oft one *Number* is contained in another, for I mentioned four different Senses in explaining *Division.* 1. To find how oft one *Number* is contained in another. 2. To find a *Number* which shall be contained in another a certain Number of Times; these two are reciprocal in their Sense. 3. To find any aliquot Part of any *Number.* 4. To find what aliquot Parts of any *Number*, another *Number* is to be denominated by; which two last are as plainly reciprocal in their Sense: Thus for *Example*, 3 is contained in 12, four Times; and 4 is a *Number* which 12 contains three Times. Again, 4 is $\frac{1}{3}$ of 12, and 3 is $\frac{1}{4}$ of 12. But if the Division have a Remainder, then only the integral *Quote* does not denominate what Part of the Dividend, the Divisor is, as if it were 14 by 3, there is no other Answer but $\frac{3}{14}$ *i. e.* 3 is $\frac{3}{14}$ Parts of 14. Now to apply all this to Fractions, the Demonstration given of the *Rule* takes into it the first two Senses. And as to the other two, I shall explain it; the only Difficulty lies here, that $\frac{2}{3}$ of $\frac{3}{4}$ seems to import a Division of $\frac{3}{4}$ by $\frac{2}{3}$: Consider, in whole Numbers, tho' from the Sense of Things you find the aliquot Part of any Number, by dividing it by the Denominator of that Part, so you find $\frac{1}{3}$ of 12, by dividing 12 by 3; yet it is plain, this is in effect a Question of Fractions, finding $\frac{1}{3}$ of 12, which is the same, as multiplying 12 by $\frac{1}{3}$ the *Answer* is $\frac{12}{3}$ and this being an improper Fraction, is reduced by dividing 12 by 3: So that this Sense does not directly belong to Division of whole Numbers; for this Division is but the perfecting an Operation in Fractions, by the *Rules* proper to them: But since all *Quotes* in Division of whole Numbers,

bers, are plainly an aliquot Part of the Dividend, denominated by the Divisor, it was not improper to mention it in that Place: But in dividing Fractions, we must apply it with this Consideration, *viz.* that as in whole Numbers 12 divided by 3, is not $\frac{1}{4}$ of $\frac{12}{1}$ which would be plainly to multiply 12 by 3; but it is 12 divided by 3 by the *Rule* of Fractions, or $\frac{1}{3}$ of 12 by Multiplication, which ends in Division of 12 by 3: So in Fractions to divide $\frac{3}{4}$ by $\frac{2}{3}$ is not to take $\frac{2}{3}$ of $\frac{3}{4}$ which is Multiplication (as explained in its Place) but to take $\frac{3}{2}$ of $\frac{3}{4}$ (reversing the Divisor as $\frac{1}{2}$ was turned to $\frac{1}{3}$ above) which to do, by the *Rule of Multiplication*, is visibly the same as to divide $\frac{1}{2}$) $\frac{3}{4}$ (by the Rule of Division. *Lastly*, for the 4th Sense which is reciprocal to the third; it is plain, in whole Numbers the *Quote* (if there is no Remainder) denominates, what aliquot Parts of the Dividend the Divisor is; so above, 3 is $\frac{1}{4}$ of 12, now the *Quote* it self is 4, or $\frac{4}{1}$ and is made the Answer of that Demand, by reversing it thus, $\frac{1}{4}$ (the same Way as in the third Sense $\frac{1}{3}$ of 12, is found by reversing $\frac{1}{3}$ into $\frac{3}{1}$, and then dividing 12 by it, according to the *Rule* of *Fractions.)* It must be the same Thing in *Fractions*, when the *Quote* reduced comes to an Integral Number, and no Remainder thus, $\frac{1}{3}$) $\frac{12}{1}$ (*Quote* $\frac{36}{3}$ or 4; so that $\frac{1}{3}$ is $\frac{1}{4}$ of $\frac{12}{1}$ (*i. e.* of 1 $\frac{3}{4}$ or 1 $\frac{1}{3}$)

But in whole *Numbers*, if you give the *Question* this Sense, when the Divisor is not an aliquot Part of the Dividend; then you can have no other Answer, but to set the Divisor fractionally over the Dividend, thus 3 is $\frac{3}{14}$ of 14, which is always the very same Thing, as dividing 14 by 3, and turning the *mixt Quote* which is 4 $\frac{2}{3}$, into an improper *Fraction* $\frac{14}{3}$ and then reversing it $\frac{3}{14}$ From this we see, that in *Fractions*, when this is the Sense, whatever the *Quote* be, reverse it and you have the Answer; so $\frac{3}{4}$ divided by $\frac{2}{3}$ *Quotes* $\frac{9}{8}$ and therefore $\frac{2}{3}$ is $\frac{8}{9}$ of $\frac{3}{4}$.

EXAMPLE in DIVISION.

Example 2d, 4 $\frac{5}{9}$) 17 $\frac{2}{3}$ (by Reduction $\frac{41}{9}$) $\frac{53}{3}$ (Quote $\frac{477}{1537}$ equal to 3 $\frac{1087}{1537}$.
Example 3d, 9) 46 $\frac{4}{5}$ (or $\frac{9}{1}$) $\frac{234}{5}$ (Quote $\frac{234}{45}$ equal to 5 $\frac{9}{45}$ or $\frac{1}{5}$.
Example 4th, $\frac{7}{11}$) 348, or $\frac{348}{1}$ (Quote $\frac{3828}{7}$ equal to 546 $\frac{6}{7}$.
Example 5th, $\frac{173}{2453}$)4792 $\frac{3}{7}$ or $\frac{33574}{7}$ (Quote $\frac{11740115}{961}$ equal to 90318 $\frac{77}{961}$.
Example 6th, 4) $\frac{13}{273}$, (Quote $\frac{13}{1092}$ or $\frac{1}{84}$.

Observe, That as to multiply any Number by a *Fraction*, diminishes the Multiplicand, for 'tis only taking a Part of it; so dividing by a *Fraction*, encreases the Dividend; because one *Fraction* may be found in another a certain Number of Times, thus, $\frac{2}{5}$) $\frac{3}{4}$ ($\frac{2}{8}$ or 1 $\frac{1}{3}$.

What I said in *Multiplication*, is applicable now in *Division*, *viz.* if a mixt whole Number is to be divided by another of the same (or a different Kind, which is an absurd Question, without proper Qualification; and when it is qualified to an *Unit* of the highest Denomination of the Divisor, then) turn all the inferior Species into Fractions of an *Unit* of the highest; and their Sum with the *Integers* make a mixt Fraction, with which proceed by the *Rule of Division of Fractions* now explained; thus, 4 *l.* 6 *s.* 8 *d.* divided by 2 *l.* is $\frac{2}{1}$) $4\frac{1}{3}$ or $\frac{13}{3}$ (Quote $\frac{1}{8}$

equal

equal to $2\frac{1}{7}$, *i. e.* 2 *l.* is contained in 4 *l.* 6 *s.* 8 *d.* 2 Times and $\frac{1}{7}$ Part; or which is all one 4 *l.* 6 *s.* 8 *d.* is equal to 2 Times 2 *l.* and $\frac{1}{7}$ Part of 2, which is alſo $\frac{1}{7}$ of 1, or $\frac{1}{3}$ of 1 *l. viz.* 6 *s.* 8 *d.*

§ VII. THE Rules of Proportion being only particular Applications of Multiplication and Diviſion, need no new Inſtructions for Caſes where *Fractions* occur; for, when the mixt whole Numbers are reduced as already taught, let the *Fraction* be alſo reduced, *viz.* the Fractions of the two Extremes muſt belong to the ſame *Unit*, and then multiply and divide the Terms (which the Nature of the Queſtion directs) by the *Rules of Fractions*.

I ſhall ſtate a few Queſtions, and leave to your Exerciſe.

1. IF *Yard* $3\frac{1}{7}$ — *L.* 16 : *s.* 18 — *Yard* 274

2. IF *L.* 14 : *s.* 9 : *d.* $10\frac{1}{7}$ — *Bolls* $28\frac{3}{18}$ — *L.* 428.

3. IF *Ounce* $\frac{7}{12}$ *l.* —— 28 —— $\frac{9}{15}$ *s.*

4. IF *Pound* 4 : *Ou.* 07 : *Dr.* $03\frac{1}{7}$ —— *l.* 792 : *s.* 16 —— $\frac{6}{12}$ *Pound.*

5. IF *L.* 25 —— $\frac{3}{4}$ *Yards* —— *L.* 34 : *s.* 17 $\frac{1}{3}$.

6. IF *Bolls.* $37\frac{1}{4}$ —— *L.* 58 : *s.* 12 : *d.* 9 : *f.* $2\frac{7}{8}$ —— *Bolls* 48 : *Buſh.* 2 : *Pecks* $1\frac{2}{3}$

Obſerve, IN all the preceeding practical Part of whole Numbers, you find only *Fractions* in three Caſes, *viz.* 1*ſt*, When in a ſimple Operation of the *Rule of Three*, there is a Remainder; but that being of the loweſt Denomination, is of no further Conſideration. Unleſs, 2*dly*, We are to add ſeveral ſuch Anſwers into one Sum, as in the *Rule of Fellowſhip*; for there, the Remainders being all of the ſame Denomination, and the Diviſor common to them all, they make *Fractions* of the ſame *Unit*, and with the ſame common Denominator; and therefore what's there directed is right; for the *Remainders* (which are the *Numerators* of theſe fractional Parts of the Anſwer) are added together; and being equal to, or greater than the Denominator, they make an improper *Fraction*, which is reduced by Diviſion, as is directed. But, 3*tio*, If a Queſtion is ſolved by two *Operations* of *ſingle Proportion*; ſo that the Number found by the Firſt, muſt be taken into the 2d *Operation*; then, the neglecting that Remainder (*i. e.* the *Fraction* it makes with the Diviſor) may cauſe too great an Error in the Anſwer of the 2d *Operation*, which is the final Anſwer; and now we ſee how to prevent it, by taking that *Fraction* into the 2d Operation.

THE Queſtions properly belonging to the *Rule of Five* are thoſe only, wrought by two *Operations*, where you may ſave the Trouble of taking in this

this *Fraction* (which will very oft make tedious Work) by performing the Work at one complex Multiplication and Diviſion, as I have taught in its Place.

CHAP. XIII.

DECIMAL FRACTIONS.

§ I. *Definition.*

WHAT I have already delivered is general, with Reſpect to Fractions of all Kinds, *i. e.* whatever Number of Parts you ſuppoſe the *Integer* divided into; yet upon ſome Suppoſitions, (tho' they have all the ſame Nature, and the Operations are effectually the ſame) the Practice is more ſimple and eaſy; and this is the Occaſion of diſtinguiſhing Fractions into ſeveral Kinds, according to theſe ſeveral Suppoſitions about the Diviſion of the *Integer*.

If we ſuppoſe the *Integer* divided into 10, and each of theſe 10 Parts again into 10, and ſo on; that is, we ſuppoſe the *Integer* divided into 10, or 100, or 1000 Parts, *&c.* theſe Parts are called *decimal Parts*; becauſe they are 10ths, or 10th of 10ths; accordingly, every Fraction having for its *Denominator* 10, or 100, or 1000, *&c.* in ſhort, whoſe Denominator is 1 encreaſed on the right Hand with any Number of *Cyphers*, making its Value 10, 100, or 1000, *&c.* is called a *decimal Fraction*; and all others in Contra-diſtinction are called *vulgar Fractions*. *Example*, $\frac{1}{10}$, $\frac{2}{100}$, $\frac{13}{1000}$, $\frac{465}{100000}$.

A *decimal Fraction* differs from a *Vulgar*, in two Things. *1ſt*, In its Denominator (as above explained). But, *2dly*, The principal Difference lies, in the Way of **Notation of Decimals**; which, being founded upon the Nature of a *decimal Denominator*, makes all the *Operations* as eaſy as they were whole Numbers.

§ II. *Notation of Decimals.*

Rule. WRITE down the *Numerator* firſt; then, conſider how many Places the *Denominator* has; reckon from the Place of *Units* of the Numerator as many Places towards the Left, as the Denominator has, and if there are not as many, ſupply them with *Cyphers* (ſet on the Left of the Numerator;) and for the laſt Place of the Denominator, in which ſtands

ſtands always 1, make a Point. See the following *Examples*, where I have turned the Fractions out of the *Vulgar*, into the *Decimal* Form.

Example.	*Example.*	*Example.*	*Example.*
$\frac{3}{10}$ is .3	$\frac{24}{1000}$ is .024	$\frac{426}{100000}$ is .00426	$\frac{37}{100}$ is .37

THIS *Notation* is arbitrary, and requires no other Reaſon, but to ſhow that in any Decimal thus written, we can well diſtinguiſh the *Numerator* and *Denominator*, which is plain; for, the Numerator is fairly written down, and ſince the Denominator conſiſts only of o's, and 1 in the higheſt Place, then it is clear, that conceiving an o, to belong to the Denominator for every Place of the Numerator, and for the remaining o's of the Denominator ſetting o's in a Rank on the left Hand of the Numerator, and a Point for the 1: We can thus know the Value of the Denominator diſtinctly, without confuſing the Numerator; becauſe theſe o's on the Left, do not change its Value, and the Point repreſents the 1 without any Confuſion; thus in $\frac{034}{1000}$, 'tis but ſtriking out two o's for the 34, and ſetting up the reſt, and a Point for the 1, thus .034.

THEREFORE, when we meet with a Decimal Fraction thus noted, the *Rule* for reading it is this, *viz.* Take the ſignificant Rank (*viz.* all that Rank, which has only o's on its Left) for the Numerator; and for the Denominator reckon as many Places, as are contained from the Place of *Units* to the Point, thus, .074, is $\frac{74}{1000}$.

FROM the Nature of *Notation of Decimals*, thus explained. It follows, 1*mo*, That if the Numerator has o's in the outtermoſt Places on the right Hand, tho' theſe encreaſe the Value of the Numerator, yet they add nothing to the Value of the Fraction, thus .0460 is no more than .046; for by cutting of all theſe o's, you diminiſh Numerator and Denominator proportionally; if you take one o, it is in effect dividing both by 10; if two, by 100, *&c.* and thus it is reduced to lower Terms (tho' perhaps not the loweſt); therefore reciprocally, all Decimals are reduced to one Denominator, by ſupplying what Places the Leſſer wants, with *Cyphers* on the Right of the Numerator; by which Numerator and Denominator are proportionally encreaſed.

2*do*, WE ſee from this, That every Decimal may be taken as the Sum of ſo many leſſer ones, whoſe Numerators are the ſeveral ſingle ſignificant Figures of the Numerator, and the Denominators are equal to ſo many Places as are contained between the Point and that Figure; thus we may conſider .034 as the Sum of .03, and .004, for the .03 is the ſame as .030, and that the Decimal given is .030, and .004, is evident.

3*tio*, IT is plain, that a mixt Decimal, *i. e.* Integers with a Decimal Fraction, ſuch as 46.3 (which is $46\frac{3}{10}$) is turned into an improper Decimal Fraction, without any Operation, by barely neglecting the Point, and reading the whole Rank of Figures, as an integral Number, which is the improper Numerator to the Denominator of the fractional Part; thus, 46.3 is $\frac{463}{10}$, which again by *Notation* is 46.3; 3.006 is $\frac{3006}{1000}$, and ſo of others.

4*to*,

4to, If to any whole Number, as 24, we add any *Cyphers*, as 2400, 'tis turned thereby into the Numerator of a Decimal Fraction, whose Denominator has as many Places as there are *Cyphers* annexed beside the Point, so the former is 24.00.

These *Observations* will be of Use in giving Reasons for what follows.

§ III. *Reduction in Decimals.*

Case 1st, To reduce a vulgar Fraction to a Decimal. Rule, Because all equal Fractions have their Numerators and Denominators directly proportional (as has been demonstrated:) Therefore, say by Proportion, as the Denominator of the Vulgar to its Numerator, so is 10, 100, *&c.* or any Decimal Denominator taken at Pleasure to a 4th, which will be its correspondent Numerator; so, for $\frac{1}{2}$ we find .5, thus 2—1—10—5. but to multiply any Number by 10, 100, *&c.* is done by adding 0, 00, *&c.* therefore take the *Rule* thus, *viz.* add to the Numerator of the given vulgar Fraction, as many *Cyphers* as you please; and then divide by the given Denominator; if there is a Remainder, add more *Cyphers* to it (for this is the same Thing as if these *Cyphers* had been at first added to the Dividend, and now brought down) and carry on the Division till 0 remain; the Quote is the Numerator of the Decimal sought, and the Denominator must have as many Places, beside the Point, as you added of *Cyphers*.

EXAMPLE. $\frac{1}{2}$ is .5

OPERATION.
2) 10 (5

EXAMPLE. $\frac{13}{25}$ is .52

OPERATION.
25) 1300 (52
125
50
50

EXAMPLE. $\frac{5}{100}$ is .05

OPERATION.
20) 100 (5

Nota, all Fractions are not equal, therefore every vulgar Fraction will not reduce accurately into a Decimal, which we know by the Division having a Remainder the same with some former Remainder, whence 'tis plain, that the Division in such will never be without a Remainder; and the Quote Figures will constantly be the same they were, for that Part of the Work betwixt these two equal Remainders: But when the Remainders are different, no Body can know whether it will not be acurate, *i. e.* whether the Division may not at last have 0 for a Remainder; yet it is generally sufficient to find 6 Figures in the Quote (and then the Denominator will be at least *Millions*) tho' the best

Way is, to be regulate by the Value of the *Integer*; if that is ſmall as 1 Farthing, then, a leſs acurate Decimal will make no ſenſible Error in any Work; but if it be great as 1 *l.* we ought to bring the Decimal Fraction nearer to exact Truth.

Caſe 2d, To reduce Integers of a lower *Species*, into the *decimal Fraction* of a higher *Species*. Rule, Form theſe Integers into a vulgar Fraction of that higher, [by *Caſe* 6th, *Reduction* of *vulgar Fractions*] and then turn that Vulgar into a Decimal, by the laſt *Caſe*.

Example 7 *d.* is $\frac{7}{240}$ *l.* and this in *Decimals* is .02916, *&c.*

Nota, By this *Caſe* may you calculate Tables of Decimals, which ſhall ſhow, what Decimal Part of any Integer is equal (or nearly ſo) to any integral Number, of any inferior *Species*; for *Example*, take 1 *l.* for the Integer, and if you find the Decimal of 1 *l.* anſwering to 1 *Farthing*, 2, 3, then to 1 *d.* 2, 3, *&c.* to 11; then to 1 *ſh.* 2, *&c.* to 19 *ſh.* ſet all theſe orderly together, and they compoſe the Table required, of whoſe Uſe I ſhall ſpeak afterwards; but you may make the Table eaſier, than by working for each Number according to *Caſe* 2d, thus, *viz.* if you find the Decimal of a *Farthing*, multiply its Numerator by 2, 3 and 4 ſucceſſive, take theſe Products as *Numerators*, keeping ſtill the ſame *Denominator*; and you have the Decimal of 2, 3, 4 *Farthings*, but 4 *Farthings* are 1 *d.* therefore, for 2, 3, *&c. d.* multiply the Fraction of 4 *Farthings* (*i. e.* of 1 *d.*) by 2, 3, *&c.* to 12, this again is 1 *ſ*; therefore multiply it by 2, 3, *&c.* to 19, and you have the Table demanded. It is eaſy to apply this in any Kind of *mixt Numbers*. Reaſon of this Practice; 'tis already demonſtrated, that Fractions are encreaſed by multiplying their Numerators, and that proportionally to the Multiplier; but 2, 3, 4 *Farthings*, are twice, thrice, four Times as great as 1 *Farthing*; therefore the Decimal Fraction expreſſing them, muſt be ſo too: *Obſerve*, that if the Decimal firſt found be not acurate, you muſt take it very deep, (*i. e.* carry it to many Places) for the Defect will encreaſe in every other one found by *Multiplication*.

Since every *Decimal* has its *Numerator* and *Denominator*, we may work every *Caſe* found in *Reduction* of *vulgar Fractions*, by handling the *Numerator* and *Denominator* of the *Decimal*, the ſame Way; but when we have done ſo, the Anſwer will not in every *Caſe* be a *Decimal*, and therefore uſeleſs; as in *Caſe* 7th and 9th, which you'll ſee clearly by conſidering the *Rule*, for theſe *Caſes*: But in all the other Caſes the Anſwer will ever be a *Decimal*, as you can as plainly perceive by the *Rules*.

§ IV. *Addition of Decimals.*

Rule, Whether they are all *pure Fractions* or *mixt*, ſet them down ſo, as the Points be all in a Column, and the other Places regularly in Columns, according as they ſtand from the Points, either in the fractional Part on the Right, or the integral on the Left of the Point; then add them up all, as if were ſimple *Integers*, ſetting a Point in the

the Sum, under the other Points, and this distinguishes the integral and fractional Parts of the Answer.

EXAMPLE.	EXAMPLE.	EXAMPLE.	EXAMPLE.
.04	.04	37.05	457.08
.456	.5	124.26	25.9
.007	.123	3057.007	264.
.9		2479.13	
.0569	Sum .663	Sum 5697.447	Sum 746.98
Sum 1.4599			

Reason of the *Rule*: From what was already explained, it is clear, that we have only to conceive o's added to the Numerator of the fractional Parts, till all the *Denominators* are equal. Again, when this is done, we may take the whole Rank as it stands (neglecting the Points) for the *Numerators* of so many *Fractions* (proper, or improper, when there are integral Parts,) which having all the same common *Denominator*, the Sum of these *Numerators* is, the *Numerator* of the Answer, to which we give the common *Denominator*; which is actually done, by setting a Point under the Points of the Parts added: Or you may see the Reason in this, that when the *Fractions* are thus set down, we have all these Figures in a Column, that have the same *Denominator*; and because the *Denominator* decreases towards the left Hand, (as whole *Numbers* encrease); therefore we ought to add, and carry by 10: For *Example*, in the Column of 100 Parts, it is plain, every 10 being $\frac{10}{100}$ is only equal to $\frac{1}{10}$; and therefore 1 for that 10, belongs to that Column, *viz.* of 10 Parts. This gives me occasion to observe a senseless Way some People have of speaking about *Decimals*, say they, *Decimals* encrease towards the Right, contrary to whole *Numbers*; but that is only the encreasing of the *Denominator*, which does in the same Proportion decrease the *Fraction*.

§ V. *Substraction of Fractions.*

Rule, SET down the *Number* as directed in *Addition*, and substract as in whole *Numbers*, setting the Point of the Remainder in the same Column, with the other Points.

EXAMPLE.	EXAMPLE.	EXAMPLE.
46.04	48.00	57.07
9.56	.98	29
Remainder 36.48.	47.04	28.97

I need say no other Thing about the Reason of this, than what was for *Addition*.

§ VI. *Multiplication of Decimals.*

Rule, MULTIPLICAND and *Multiplier*, being either *Decimal Fractions* or *Mixt*; or the one a whole Number, the other a Fraction or mixt; multiply in all Respects, as if the whole Rank were *Integral*, and from the Product take off with a Point, as many Places (on the right Hand) as there are Decimal Places (excluding the Point) in both *Multiplier* and *Multiplicand*; and if there be not so many, supply the Defect with *Cyphers* on the left Hand; and thus the *Integral* and *fractional Parts* of the Product, are duly distinguished.

EXAMPLE.	*EXAMPLE.*	*EXAMPLE.*
2.04	.0046	.00453
4.6	.52	47
1224	92	3171
816	230	1812
Product 9.384	.002392	.21291

Reason of this *Rule* is plain; for (by what's already explained) when we consider the whole Rank as *Integral*, it is the Numerator of the Fraction (proper or improper:) and to multiply *Fractions* we must [by the *general Rule* already demonstrated in *Chap.* 12. § 5th] multiply the two *Numerators*, and the two *Denominators*: But this we actually do by the *Rule* here given, first we multiply the *Numerators*; and then by taking off as many *decimal Places* as both *Multiplier* and *Multiplicand* contains, we give the Product of the *Numerators* a *Denominator*, equal to the Product of the *Denominators*; for 'tis visible, if 100 is multiplied by 1000, the Product is 100000, *i. e.* the Product of two *decimal* Denominators is always 1 encreased with as many *Cyphers*, on the Right, as both the *Multiplier* and *Multiplicand* contain; and if one of them is a whole Number, its Denominator is simply 1, and hence the Product is the Denominator of the other, therefore the *Rule* is good.

§ VII. *Division of Decimals.*

Rule, THE *Dividend* and *Divisor* being *Fractions* or *mixt*, or one of them a whole Number; look upon all the Rank in each, as a whole Number; (*i. e.* all the significant Rank; for 0's in the last Places on the left Hand, are insignificant here) and divide in all Respects by the *Rule* of whole Numbers: But if in this View the Dividend is least, add *Cyphers* to it on the right Hand, till it be equal or greater than the Divisor, and then divide; all the Figures of the Dividend being brought down, according to the

common *Rule*, if there is any Remainder, you may continue the Division by adding more *Cyphers* to the Remainder, and for every 0 added, set a Figure in the *Quote*: And thus the Division may be carried on till 0 remain, or as far as you please; for 'tis not every *Example* that will come to a Remainder of 0.

THE *Quote*, being thus found, must be qualified in this Manner, *viz.* see how many Places of Decimals (excluding the Point) there are in the Divisor, and in the Dividend (including all the 0's added at first and to the Remainders, and if the Dividend was a whole Number, the 0's added are only the Decimal Places) if they are equal in Number, the *Quote* is all a whole Number; if these in the Dividend are most, take the Difference, and let as many Places be set off the right Hand of the *Quote*, (with a Decimal Point) and if there are not as many, supply the Defect with *Cyphers* on the left Hand; the Quote will thereby be a Fraction or mixt; but if the Decimal Places of the Divisor be most, then, take the Difference, and annex as many *Cyphers* to the Right of the Quote, and it is all a whole Number.

EXAMPLE 1st.

.004) .128 (32 true Quote.
12

008
8

0

EXAMPLE 2d.

.024) .48 (20 true Quote.
48

00

EXAMPLE 3d.

8) 2.04 (255 true Quote.
16

.255
44
40

40
40

00

EXAMPLE 4th.

27) 109.35 (4.05 Quote.
108

135
135

EXAMPLE 5th.

4.23) 6784 (1603.7825 true Quote.
423

2554
2538

1600
1269

3310
2961

3490
3384

1060
846

2140
2115
---
25 Remainder

EX-

EXAMPLE 6th.

68) .4 (
Prepared
68) 400 (.588
340 Quote
.0588
600
544
560
544
Remainder 16

EXAMPLE 7th.

5.06) 2024 (400
2024
0000

Reason of the *Rule*, 1. It is certain from what is shown in § 18 of this Chapter, that the Cyphers added to the *Dividend* (or *Remainder*, it is all one, for the *Remainder* being a Part of the *Dividend*, the Cyphers added to the Remainder, may be conceived to have belonged to the *Dividend*) do not alter the Value of the *Dividend*, for they encreaſe *Numerator* and *Denominator* equally. 2. It is plain, that were *Diviſor* and *Dividend* only whole *Numbers*, as we ſuppoſe in the *Rule*, then the *Quote*, as found, were a whole *Number*, and would want no Qualification; but when we take them for whole *Numbers*, they are only *Numerators* of *Fractions*, whoſe *Denominators* are 1 encreaſed by the Number of *decimal Places*, that ſtand on the right Hand of the Point. Again 3. Conſider from the general Nature of *Fractions*, to divide the *Numerator* or multiply the *Denominator* by the ſame *Number*, does equally diminiſh, or divide the *Fraction*; and to multiply the *Numerator*, or divide the *Denominator*, does equally encreaſe the *Fraction*: Therefore, to divide one *Fraction* by another, we may divide the *Numerator* and *Denominator* of the *Dividend*, by the *Numerator* and *Denominator* of the *Diviſor*, and ſet the *Quote* fractionally for the *Quote* ſought (*i. e.* divide the *Quote* of the *Numerators*, by the *Quote* of the *Denominators*, that *Quote* is the *Quote* ſought, becauſe every fractional Expreſſion imports, the dividing the *Numerator* by the *Denominator*, as has been already ſhown.) It is plain from what is ſaid, that this has the ſame Effect, as multiplying the *Numerator* and *Denominator* of the *Dividend*, by the *Denominator* and *Numerator* of the *Diviſor*, [as the *Rule* is in *Chap* 12, § 6th.] Now, according to the preceeding *Rule* of *Diviſion* of *Decimals*, we actually do this; for by taking the *Diviſor* and *Dividend* for whole *Numbers*, they are *Numerators* of two *Fractions*, and theſe *Numerators* we have already divided; we alſo actually divide the *Denominators*, and this muſt be ſhown in diſtinct Caſes, according as the *Rule* is delivered. 1. If the *decimal Places* in *Diviſor* and *Dividend* are equal, it is plain their *Denominators* are equal, and ſo their *Quote* is 1; conſequently, the *Quote* of the *Numerators* found, is the true *Quote* ſought, and all a whole *Number*, as in *Example* 1ſt. 2. If thoſe of the *Dividend* are moſt, then its *Denominator* is greateſt, and if it is divided by the

De-

Denominator of the *Diviſor*, the *Quote* is the Difference directed to be taken in the *Rule*; for, if 1000 is divided by 10, the true *Quote* is 100; that is $\frac{1}{10}$ of $\frac{1000}{10}$ is $\frac{1000}{10}$ equal to $\frac{1}{1}$ or 100, by cutting off an equal Number of Cyphers in both, whereby remains only the Difference mentioned, together with 1 or a Point; and therefore ſo many Places ſeparate with a *Decimal Point*, from the *Quote* found, give it the *Denominator* required to make the true *Quot*, as in *Example* 3d, 4th, 5th, 6th. *Laſtly*, If the *Denominator* of the *Diviſor* is greateſt; then if we divide it by the *Denominator* of the *Dividend*, the *Quote* is a *Fraction*, as in *Example* 2d, the *Diviſor* $\frac{24}{1000}$, and the *Dividend* $\frac{48}{100}$: To divide theſe two, *Firſt*, 48 is divided by 24, the *Quote* is 2: Again, 100 divided by 1000, the *Quote* is $\frac{100}{1000}$ or $\frac{1}{10}$ (cutting off equal Cyphers) and by this *Quote* we ſhould divide that of the *Numerators*, *viz.* 2. Now if we divide 2, the *Quote* of the *Numerators* by $\frac{1}{10}$ (the *Quote* of the *Denominators*) the *Quote* by the *general Rule* in *Chap.* 12th 6th, is 200, the true *Quote* ſought, according to what is premiſed in Article 3d of this Demonſtration. From which, reaſoning the *Rule*, in this Caſe, is good; for the *Denominators* being always 1 or 10, *&c.* the *Quote* of the *Denominator* of the *Dividend*, by that of the *Diviſor*, will always come to $\frac{1}{10}$ *&c.* and which 10, *&c.* will always be the Difference directed to be taken; and the *Quote* of the *Numerators* found, being divided thereby, will always be encreaſed as much, as the Addition of theſe Cyphers can do.

Obſerve, As to the *laſt Caſe*, the *Diviſion* ſhould never be left off, while the *decimal Places* of the *Dividend*, are leſs than thoſe in the *Diviſor*; unleſs the *Diviſor* come to a *Remainder* of 0, before that, as it does in *Example* 2d and 7th. Again, if the *Diviſion* comes not ſoon to a *Remainder* of 0, you may leave it off, when you have got ſuch a *Quote* as will leave 4 or 6 Places of *Decimals*, which will be ſufficient in moſt Caſes of common Affairs; and this you'll always know by the *Rule*: For, as many Places of *Decimals* as you would have in the *Quote*, ſo many muſt the *decimal Places* of the *Dividend*, (including theſe 0's added to the *Remainder*) exceed thoſe of the *Diviſor*.

If you enquire, what the Quality of the *Remainder* is? It is plainly of the ſame Value, with the laſt Places of the *Dividend*, of which it is a Remainder, *i. e.* it is the *Numerator* of a *Fraction*, whoſe *Denominator* is that of the *Dividend*: So in *Example* 5th, the *Remainder* is .000025, and when you multiply the *Diviſor* (to prove the Work) the *Remainder* reduced to this *State*, muſt be added to the *Product*, and then it will be equal to the *Dividend*.

§ VIII. As to the *Application of Decimals*, I ſhall not inſiſt much: You may take this one *general Rule*, *viz.* when you have any Calculation of *Proportion*, where your *Terms* are *mixt whole Numbers*, as *l. s. d.* I ſuppoſe you have at Hand *Decimal Tables*, where you can find what *Decimal* of any higher *Unit*, is equal to any *integral Number* of the lower *Species*: By theſe *Tables*, turn all the inferior *Species* of every *mixt Term*, into *Decimals* of the higheſt; and if there are more than one, add them together, (by the *Rule of Decimals*) the Sum is the fractional Part of that *Term*, to

be

be annexed to the higheſt *Integer* of it, and then perform your *Work of Proportion*, by multiplying and dividing theſe *Terms* according to the *Rule of Decimals*. When the Anſwer is found, you may find the Value of the fractional Part of it, either by the *Tables* nearly, or by the Method of *Caſe* 7th, *Reduction of Vulgar Fractions*.

Example, If 6 *Yards* 3 *Quarters* coſt *Lib.* 16 : *s.* .7 : *d.* .6 what 25 *Yards*.

The Terms *turn'd into* Decimals *ſtand thus.*

7 *ſh.* is .35 *lib.*
6 *d.* is .025
Sum .375
3 *Quart.* is .75 *Yard*

Yd. *Lib.* *Yd.*
If 6.75 — 16.375 — 25
25
81875
33750
419.375

6.75) 419.375 (62.1296 *Lib.*
4050
1437
1350
875
675
2000
1350
6500
6075
4250
4050
200

To carry this further it turns into an infinite *Decimal*, for we had already 200 for a *Remainder*.

Obſerve, I have given you one *Example*; but I ſhall venture to affirm that for the more ordinary Affairs, 'tis not one of fifty Caſes, at leaſt, that you can apply *Decimals* to, with any Advantage as to expeditious Calculation; and for Accuracy that is not their Advantage in any Caſe; becauſe we cannot have an exact *Decimal* for every Number of any inferior *Species*; tho' they may be brought infinitely near Truth, but then the nearer, the *Decimal* is the Deeper; and ſo the *Operation* to be performed with it the more tedious. Mathematical Calculations are moſt aſſiſted by *decimal Fractions*; indeed were all our greater Weights, Meaſures, Coins, *&c.* decimally divided by Law, in that Caſe *Decimals* were of noble Uſe, and the Practice of *Arithmetick* would become wonderfully eaſy; the Advantage of this would be ſo great, at leaſt, as to all our domeſtick Trading, that upon that Score it is mightily to be wiſhed: But when we come to Exchange our Weights, Coins, *&c.* with Strangers, then the old trouble returns, (unleſs their's were ſo too) but even then, there would be no greater Trouble than there is now.

FINIS.

INSTRUCTIONS FOR BOOK-KEEPING.

CHAP. I.

Containing a distinct and full Explication of the DESIGN; *the* METHOD *of obtaining it, and all the* Primary *or* Fundamental NOTIONS, *with the most* general RULES.

§ I. AS Regularity and Order are the Product of Reason, they serve to distinguish the Rational, from the irrational World: Reason is not only the Glory of our Nature, but to exercise it with utmost Advantage, is certainly the Interest of our Being; its Functions are not confined to one Sort of our Actions, they extend to every Thing transacted among Men, in so much, that wherever we find the Effect of Counsel, Contrivance and Design, there we acknowledge Reason.

MAN is a Creature designed for Society, and cannot live without the mutual Help of his Fellows; this is what has introduced the Thing, we call Affairs and Business among Men; for Societies are supported by Commerce, by which I mean, not only Merchandize in a strict and proper Sense, but where-ever there is giving and receiving, there is *Commerce*; we cannot otherwise live, but

by mutual giving and receiving, either the Labour and Service of our Body or Mind, or something else we are possessed of; therefore is *Justice* a Virtue, so necessary to *Society*, and where that fails, Oppression takes Place: But there is another Way, by which we can wrong others, and even our selves, without doing any wilful Injustice, and that is, by giving our Memory too much Trust, and neglecting to write down every Transaction of our Affairs, or setting them down in so disorderly and confused a Manner, that every Person's Right is not truly distinguished, but they are charged too much, or too little: Now, whatever Mens Affairs are, have they more or less dealing with others, there's a plain Necessity to have the Transactions thereof orderly and distinctly recorded. The Endeavours that have been used to invent a Method for performing this, have produced the Method, which is here called **Book-keeping**; and I shall define it, *The Art of recording the Transactions of a Man's Affairs, in such exact and regular Order, that at any Time he may know the true and just State of any particular Part of his Affairs, or of the whole, with the greatest Ease and Dispatch.*

Thus far you have the End of *Book-keeping* proposed in general; and by the Definition it is visible, how much such a Method is desirable, in every Calling and Circumstance of Life; even the most private require a regular Accompt, for satisfying the Person concerned, as to the Course and State of his Affairs; and if his Business ly more abroad, besides the Advantage to his worldly Interest, it concerns him as a Man and Christian, to be in Condition at all Times, to satisfie the World of the Honesty and Fairness of his Dealing; which he is able to do only by good Order and Method, in the Records of his Affairs.

To explain the Principles and Rules of this Method, 'tis necessary we set before us, some particular Business to which it is applied; it will be best to choose that wherein is greatest Variety, and which being well understood, it will require no more, than a diligent Attention to the general Rules and Notions explained, (and particularly applied to that one Thing) in Order to make the Application to any other Thing.

As it is certain this Method was invented and improven, for the Sake of Merchants Accompts, so 'tis reasonable to make the first Application that Way: It is here we have the greatest Variety of Occurrences; and the Nature of Things makes a great Necessity, that there be a just and regular Method, where the Danger following confused and disorderly Accompts, is greatest, as it is unquestionably in this Case; for Merchandize is the Business of the most general Nature, wherein many Subjects are concerned, and so there is the most frequent Change of the Circumstance and State of Things, and Interest of Persons; Trade being a perpetual shifting of Things from one Hand to another. Let us then proceed to explain this Method, and apply it to Merchants Accompts.

§. II. A Merchant having made an Inventary of his Estate and Debts, (unless he begins to Trade altogether upon Credit) must continue daily to record all his Transactions; for this is the first Rule, That nothing ought to be left to *Memory*, or at least, not to continue there for long Time; because, beside

beſide the Hazard of a total Neglect, this Method propoſes to do Things ſo exactly, that even a Stranger might know the State of our Affairs by our Books: But to make theſe Records ſo, as to obtain the foreſaid End, is the preſent Enquiry. The Value and Juſtneſs of any Method, is beſt known by its anſwering the Deſign; and the beſt Way to obtain a diſtinct Notion of the Method, is by having before us a full and clear View of that Deſign: I ſhall therefore be more particular in explaining the ſame. Thus,

Men, Goods and Money, are the eſſential Subjects of Merchants Accompts: It is neceſſary then, particularly to know, what is the End of *Book-keeping*, with Reſpect to theſe, which is, 1. With Reſpect to every *Man* with whom the Merchant deals, to know the State of Debt and Credit, *i. e.* what he owes me, and I owe him, with all the Circumſtances. 2. With Reſpect to every Kind of *Goods*, (or Merchandize) in which the Merchant deals, to know the Quantity and Value purchaſed in any Time, and how it is diſpoſed of, (with the Circumſtances of the ſeveral Tranſactions) by comparing of which, he may know what remains on Hand, and the Gain or Loſs, on the Part diſpoſed. 3. For *Money*, 'tis required to know, what's received and given out in any Time, that conſequently he may know the Balance in Hand.

Now, all theſe Demands, a Merchant muſt be able to fit in his Compting-houſe, and anſwer to himſelf, or others concerned; and not be at meaſuring, weighing and telling over his Goods, and Caſh, at every Time; and if there are any other Demands relating to the State of a Man's Affairs, which may ariſe in the Courſe of Trade, his Books muſt anſwer them all. But we ſhall inſiſt at firſt, only upon the more material Things, and then it will be eaſie to extend our Thoughts to whatever may occur; and I ſhall take in other uſeful Things by Degrees, in the Courſe of the following *Inſtructions*. And now, if we ſuppoſe a Man can ſatisfie himſelf in the State of Particulars, 'tis but going thro' them all, to know the total State of his Affairs.

§ III. I come next to explain the *Method* of obtaining theſe Ends, which is by keeping ſeveral Books of Record, the chief of which are called the Waſte-Book, Journal and Leger: Of which in Order.

We may conſider a *Man*, either now beginning to Trade, or, who being a Merchant, would rectifie his Books, and follow the true Method of Accompts: The firſt Step to be taken in either of theſe Caſes, is, to make a compleat Inventary of a Merchant's Effects and Debts; after this he muſt take Care to make a fair and ample Record, of all Tranſactions whatever, that occur in his Practice, containing the whole Circumſtances of the Date, Mens Names, and Deſignations, the Names, Quantities, and Prices of Goods, Terms of Payment, and every other Condition: Let theſe be recorded according to the Succeſſion of their Dates, in a plain familiar Stile, which is no more, than a juſt Narration of Matter of Fact, and the Book which contains this, is called the Waſte-Book, a Sight of which, with proper Examples, will make the Uſe of it more plain, than many Words. [See the following practical Set of *Books*] This Book, as deſcribed,

ſcribed, is really a *Day* or *Journal-Book*. But this Name belongs to another Book, as we ſhall ſee below.

If a Man begins to Trade altogether upon Credit, *i. e.* he has no Stock, and therefore takes up Merchandize upon Credit, his Books begin with the firſt Thing that moves.

Now if in this Waſte-Book, we have a Record of every Thing done in a Merchants Affairs, you'll ask, What we want more? It is not ſimply impoſſible, to find an Anſwer to any Demand about a Merchant's Affairs, from the Records of this Book; but there is no other Order in it, than that Things of the ſame Date ly next other, and to know the State of Affairs, the Tranſactions relating to the ſame Subject, muſt be ſeen altogether, which muſt either be done by a Search into the *Waſte-Book*, and gathering up the Tranſactions relative to every diſtinct Part of our Affairs at every Time, we would know the State of any Particular, which were utterly inſufferable; or a Method muſt be had of recording Things, ſo as we may not have this to do at every Time. The Deficiency of the *Waſte-Book* therefore is, That Tranſactions relative to the ſame Subject ly ſcattered in it, according to their Dates; and this Defect points very naturally to the Remedy, and ſhows us in general what muſt be the Method of recording Things in the principal *Book of Accompts*, to anſwer the End of *Book-keeping*. The *Method* in general, is this, *viz.* All Tranſactions that occur from Time to Time, muſt be tranſported from the *Waſte-Book* into another, in ſuch Form, that all belonging to the ſame Subject be placed or ſtand together, under the proper Name of that Subject, that ſo we may ſee all the Particulars diſtinctly at one View: This principal *Book of Accompts*, is called the Leger, in which general Deſcription of it, we ſee a Perfection directly oppoſite to the Deficiency of the *Waſte-Book*. The next Thing in Order muſt be to give a more particular Deſcription of this Leger-Book.

§ IV. With Reſpect to the Leger, there are two chief Things to be learned. 1. The Method of ruling it with the general Uſe of the Columns and Spaces; but this you'll learn better from the following *Books*. 2. The main Thing is the particular Method of entring every Tranſaction into this Book, and herein the beſt Part of *Book-keeping* conſiſts, which take in the following Articles. 1. The *Leger* being ruled and numbered in *Folios*, and the *Pages* divided into a certain Number of Spaces, (as many as we pleaſe and think convenient) every *Perſon* with whom a Merchant has dealing, and every diſtinct *Kind of Goods* he trades in, have one of theſe *Spaces* (which contain an equal Portion of Right and left Hand *Pages*) aſſigned to them, with their Names written on the Head of it, in which ſeparate Spaces, are recorded all, and only, the Tranſactions relating to that *Subject*, which titles the Space: Alſo there muſt be a Space for the Accompt of *Money* or *Caſh*. 2. Thus far are the Records in better Condition than in the *Waſte-Book*, becauſe of theſe diſtinct Spaces for every diſtinct Subject; but even this is not enough, the Tranſactions muſt ly in theſe Spaces in the beſt Order, by diſtinguiſhing them ſo as all upon one Side be of the ſame Nature, and oppoſite to what is on the other Side of the Space

or *Accompt*, and this you have contained in the following Definition of the Uſes of the three eſſential Accompts, *viz.* 1. *A Man's Accompt, (i. e.* the Space titled with any Perſon's Name) muſt contain on the left Side what he owes me, or is accomptable for, and on the right Side what I owe him, or am accomptable for, with the Circumſtances. 2. *An Accompt of Goods*, (which is titled with the general Name of that Kind, as *Tobacco*, *Wine*, &c.) muſt contain on the left Side, a Record of the Quantity, Price, *&c.* of that Kind purchaſed from Time to Time, with the Charges of Merchandize thereupon; and on the right Side, how they are diſpoſed of. 3. *The Accompt of Caſh*, muſt ſhow on the left Side, what Money is received, and on the right Side what's given out. Now 'tis plain, that theſe Accompts thus uſed, contain ſuch a Record as was wanting, for by comparing the two Sides, we may have a very ready Anſwer to any Inquiry about the State of theſe particular Subjects, in which the End of *Book-keeping* is obtained. There ſeems only one Thing wanting to compleat the Deſign, *viz.* how we ſhall find where any Accompt ſtands in the *Leger*, and this is done by an Alphabet or Index-Book, into which are entred the Names of every Title of *Accompt*, with the *Folio* of the *Leger* where they ſtand; I need inſiſt no more upon ſo common a Thing; you have an Example in the following *Books*, and you may contrive them after what Form you pleaſe: By Means of this *Book*, we can find out any Accompt, and with great Eaſe and Diſpatch ſatisfie any Enquiry, which is to obtain the End of *Book-keeping*. But the proper Stile of this *Book*, remains to be conſidered, which we have, and the whole Method probably, from the *Italians*, and it is by *Debtor* and *Creditor*; whence it is frequently denominoted *Italian Book-keeping*, and the Method of *Debtor* and *Creditor*. Thus,

§ V. Every *Accompt* is marked *Debtor* on the left Side, and *Creditor* on the Right, therefore every Thing recorded on the Debtor ſide muſt be in this Stile, *A. B.* (for a Mans Name) or *Tobacco*, &c. (for an Accompt of Goods) Debtor to—— which muſt be followed by ſome other Title, or Name of Perſon, or Thing, which is called the *Creditor*, for a Debtor ſuppoſes a Creditor, and contrarily; and the ſame Tranſaction muſt be recorded on the Creditors ſide of that other Accompt, as relating alſo thereto, and the Stile muſt be *A. B. Creditor* by—— ſome other Accompt, which is the *Debtor*, and after the Creditor or Debtor are mentioned, follows the Narration of the Debt or Credit, with the Grounds thereof. Hence we ſee, that every Tranſaction muſt be at leaſt twice recorded in the *Leger*, *viz.* Upon the Debtors Accompt, and alſo upon the Creditors, for theſe ſuppoſe and refer to one the other; but eſpecially for this Reaſon, becauſe the Tranſactions relating to every Subject muſt, by the preceeding general Rules, be recorded on their particular and diſtinct Accompts; and therefore, when any Tranſaction relates to ſeveral Subjects, it muſt be recorded on each of their Accompts, for their reſpective Concerns. But this Notion of *Debtor* and *Creditor* needs to be further explained.

§ VI

§ VI. The general Account already given of the Method of the *Leger-Book*, is, I think, very plain, and answers the Design of *Book-Keeping* manifestly; and for the Stile, I hope to make appear that it is neither difficult nor unreasonable, but has a great deal of Order and Beauty. I shall therefore endeavour to explain it, so as we may form a just and clear Notion thereof, which will introduce some more particular Instructions about the *Leger-Records*; for the distinct thorough conceiving the first fundamental Notions, can only enable a Man to apply the Method, to every Case of Merchandize, or to any other Business, and at Discretion, make various Applications of a general Rule, in any particular Affair, and the Design still answered.

As to the Phrase of *Debtor* and *Creditor*, which runs thro' this whole Method, if we speak very strictly, it is nothing but a Matter of meer Stile, but yet it has Advantages, and founded also in Reason, as we shall see. The Words *Debtor* and *Creditor*, are familiar to our Language, and every body knows what they signify, when appiled to Men: It remains only to be explained, what they mean, when applied to other Things; as Goods and Cash? If we look back upon the general Rule, for the Use of an Accompt of Goods and Cash, in § IV. and consider, That if Things were written on the Sides of the Accompt only, in a plain narrative Stile, the Design would be obtained as to that particular Accompt; and since the applying the Terms *Debtor* and *Creditor*, never alters the State of the Records, in any essential Point, (but rather improves the Distinctness thereof, as we shall see.) There can therefore, be nothing false in it; and if we consider it only as a Stile, it has the Advantage of making the whole *Leger* uniform: Yet, I should not think this sufficient, if there were not some other Reason, to justify the applying these Terms to other Things, that seem proper only to Men, and even make it necessary; for avoiding a greater Absurdity. Now we shall find out this Reason, by considering, 1*mo*, That the Stile is right apply'd to a Man's Accompt. 2*do*, That a *Debtor* and *Creditor* are related Terms; the one always supposing the other, so that there cannot, without a Contradiction to the common Sense of these Words, be a *Debtor* or *Creditor*, but there must be a corresponding *Creditor* and *Debtor*. 3*tio*. It is a fundamental Rule, That the Merchant's Name, Titles no Space in his own *Leger*, because all the Debts and Credits that are found in it, upon any Man's Accompt, are understood to be owing to, and by the Owner, and thereby his Debts and Credits, are clearly shown upon these Persons Accompts, with whom his Dealings are; and if we suppose such an Accompt in his *Leger*, it would necessarly be as large as all the rest of the personal Accompts in the Book, since it must contain on the *Creditor* side all the Articles that are on the *Debtor* side of every Man's Accompt, and contrarily, on the *Debtor* side, to no manner of Purpose; unless you say, it were necessary, that we might never want a corresponding *Debtor* and *Creditor*, with respect to personal Accompts, to which the Phrase *Debtor* and *Creditor*, is confessedly right applied: But let us consider, That when a Person becomes my *Debtor* or *Creditor*, I suppose there is some real Ground and Foundation of the Debt and Credit; and since every distinct Subject must have a Space in the *Leger*, and the Transaction recorded on

that

that Accompt, as it relates thereto, we ſhall find nothing more proper, than to apply the Stile of *Debtor* and *Creditor*, to every Accompt in the *Leger*, as it is, or may be, the real Ground of any perſonal Debt or Credit; and thus, not only is the End obtained by keeping ſuch an Accompt, but as it is denominate *Debtor* and *Creditor*, it perſonates the Merchant or Owner, as he is upon Accompt thereof, become either a *Debtor* or *Creditor*, and hereby the Abſurdity is ſhunned, of making a *Debtor* without a *Creditor*, or *Creditor* without a *Debtor*. And in other Caſes, where there is no real Debt, as when one thing is given for another, yet the Phraſe is reaſonably uſed for maintaining the Uniformity of the Stile. I ſhall explain all this by ſome Examples, 1. Suppoſe, I buy a Quantity of Wine from *A. B.* payable in three Months, I muſt give *Wines* an Accompt in the *Leger*, and on the left Side record (by the preceeding general Rules) ſuch a Quantity bought; I muſt alſo give *A. B.* an Accompt on the right Side of which I record ſo much I owe him for Wine, he is Creditor by me; but ſince the Tranſaction muſt alſo be recorded on the Accompt *Wines*, which is the Ground of his Credit, or my Debt, therefore the Accompt *Wines* is charged, or made *Debtor* to *A. B.* and he *Creditor* by Accompt *Wines*. Example 2. If I ſell of the *Wines* payable on Time, the Buyer muſt have an Accompt, on the left Side of which I make him Debtor to me for ſo much Wine; but the Tranſaction muſt be recorded alſo upon the right Side of the Accompt *Wine*, to ſhew what is diſpoſed: The Buyer is Debtor to me for theſe Wines, therefore I make him *Debtor* to *Wines*, and *Wines Creditor* by him, and the Wine Accompt is hereby diſcharged of ſo much. But laſtly, for a 3d Example, Suppoſe, I had bought and ſold Wines for Money preſently paid, (or any other Thing in Barter) the *Caſh*, (or other Thing bartered) has an Accompt in the *Leger*, and upon it muſt be recorded, what is received or delivered, as well as upon the Accomp *Wines*; and if the Stile *Debtor* and *Creditor*, be applied with any Reaſon in one Caſe, it muſt be ſo in all, for the ſake of Regularity; and ſo I charge or make the Thing recorded, *Debtor* to the Thing delivered, which in its Accompt is diſcharged, (as having rendred up ſo much of the Truſt it was *Debtor* for) or made *Creditor* by the other; for the Thing received is anſwerable and forthcoming to me, for the Value of the Thing given, as much, as any Perſon to whom I might have ſold it, who, by Example 2d, would have been made *Debtor* to that Accompt of Goods given out, and it *Creditor* by him: Therefore the Stile may, and ought to be the ſame; for there can be no falſe Conſequence, ſince the fundamental Rule remains inviolate. So the Terms *Debtor* and *Creditor* in this Art, are not confined to Perſons, but applied to every real Thing, that is the Ground of a Debt or Credit, as in Example 1ſt and 2d, and even when there is no formal Debt contracted, the Phraſe is uſed for Methods ſake, when one Thing comes in Place of another, as in Example 3d; ſo that we have hereby not only Uniformity thro' the whole Book, but there is a pointed clear Reference of one Accompt to another, which are concerned in the ſame Tranſaction. It is very remarkable too, that there is a continued Connection and Dependence of the Accompts in every Article, one upon another, ſo that all things here run into a Ballance; for if there is no Accompt made *Debtor*, but

ſome

ſome other is at the ſame time made *Creditor*, for the ſame Sum, it is plain the Total of the Debts thro' the whole Book, will at all times ſtand equal to the Total of the Credits, which keeps up a perpetual Ballance, and affords one good Way for aſſuring the Truth and Juſtneſs of the Records. But more of this in another Place. To Charge or Diſcharge an Accompt, you ſee is the ſame thing as to make it *Debtor* or *Creditor*, but underſtand, that tho' every Accompt which you make *Debtor*, is very properly ſaid to be charged, whether that Accompt had any preceeding Credit or not, yet to diſcharge an Accompt is not ſaid, when it is made *Creditor*, unleſs there were a former Debt which this *Credit* does Ballance, in whole, or part; for an Accompt can then only pretend to a Diſcharge, when the Charge or Truſt on the *Debtor*-ſide, is rendred and paſſes into another Accompt, ſo that it no longer belongs to this one, and then, the one Accompt, comes in place of the other.

In Conſequence therefore of this Method of *Debtor* and *Creditor*, to which every thing is reduced, it becomes a *fundamental Rule*, That there muſt be no daſhing out of Accompts, but every thing given and received betwixt the Merchant, and the Perſon he Deals with, fairly ſtated to that Perſon's Accompt, as Debt or Credit, without regard to what preceeded, and the Ballance or Difference, of the two Sides of his Accompt, will ſhew who is really in Debt; therefore I diſcharge any Man, who was formerly *Debtor* in my Books, for his Payment to me, by giving him Credit for the Value received: And I diſcharge my ſelf of what Debts I pay, by making the Receiver, who ſtood formerly *Creditor*, *Debtor* for what I give; and this is one ſeeming Difficulty removed, *viz.* Why I give a Man Credit who does but pay his own Debt, or make him Debtor to whom I pay my Debt. But you'll find alſo in a *Leger-Book*, one Perſon expreſſed *Debtor* to another; How can this be, ſay you, ſince the Merchant or Owner, ought to be one Party in all Debts and Credits, that ſtand in his Book? This Difficulty is ſoon removed, by conſidering, That it occurs only in ſuch Caſes, where ſome Perſon owes me, and I owe to another the very ſame Debt, *i. e.* the one's Debt is the Ground of the other's Credit. For *Example*, *A. B.* owes me 100 *l.* he ſtands *Debtor* in my Book for it, and when the Time of Payment comes, he gives me an accepted Aſſignation on *C. D.* 'tis certain therefore I muſt diſcharge *A. B.* and give him Credit to Ballance, and take away his former Debt, and I muſt bring in *C. D. Debtor* in his place. *Again*, Suppoſe a Friend or Correſpondent of mine, to whom perhaps I owe nothing, draws a Bill on me payable on Time to another Perſon; by accepting the Bill, I take upon me a Debt to that other Perſon, which Debt my Friend is alſo due to me, wherefore I make my Friend *Debtor*, and to the other Perſon I give Credit in my Books: The expreſſing the one Perſon *Debtor* to the other, is only the Stile of the Book, and does no way ſtate a formal Debt betwixt theſe Perſons, but the one is properly my *Debtor*, and the other my *Creditor*, and underſtood to be ſo; and as they are thus connected in the Stile, it imports that the one's Debt, is the Ground of the others Credit with me, for each of them will ſtate it differently in their own Books, as it relates to themſelves.

It is therefore another *Rule*, That the Merchant ought not to mind what Debt any Tranſaction, tho' he have a Concern in it, makes betwixt any two Perſons, but what any Perſon owes, and is accountable to him for, or he to him.

Upon the whole, that has been explained, we may make theſe practical Obſervations, as to the three eſſential Accompts, 1*mo*, As to a Man's Accompt, if you find it *Debtor* to another Man's Accompt, you are to underſtand it as due to me, but that I owe or am accountable for the ſame, to that other; and oppoſitely, when you find one Man's Accompt *Creditor* by another. If you find a Man's Accompt *Debtor* to, or *Creditor* by an Accompt of Goods or Caſh, underſtand that this is a Debt due to, or by me, the Ground whereof is ſuch Goods or Caſh given, or received betwixt me and that Perſon, or ſome other in whoſe place he came. 2*do*, As to an Accompt of Goods or Caſh, if you find it *Debitor* or *Creditor* by any Perſon, you underſtand it is or was due to, or by that Perſon, as being received from or given to him, or ſome other in whoſe place he came; and if you find one Accompt of Goods or Caſh, *Debtor* to, or *Creditor* by another Accompt of Goods or Caſh, it imports that the Quantity on the *Debtor's* Accompt, was received for that on the *Creditor's* Acccompt.

§ VII. We have already conſidered the more eſſential Accompts, and they may be called, 1. Perſonal-Accompts, ſuch are *Mens-Accompts*. And 2. Real Accompts, as *Accompts of Goods*, and *Caſh*; (to this Branch belong not only ſuch Things as are more ſtrictly called *Merchandize*; but every Thing, the Property whereof can paſs, or be transferred from one Perſon to another, as Ships, Houſes, Cattel, *&c.* in ſhort, every other Thing, or real Effects in Nature.) And tho' theſe may ſeem to be the only neceſſary Accompts, as indeed they are the material Subjects; yet, to purſue the Method of *Book-keeping* compleatly, we ſhall find another Kind neceſſary. To underſtand this, conſider, every Tranſaction in a Man's Affairs, produceth ſome Alteration in the State and Poſture thereof: And as we have already mentioned, it is another principal Rule, that there muſt be a Record made of every Thing tranſacted, and it muſt alſo be in Form of *Debt* and *Credit*. But it may fall out, That we may have ſome *Perſonal* or *Real Debtor* or *Creditor*, (according to the preceeding Uſe of theſe Accompts,) but no correſpondent *Creditor* or *Debtor*, which muſt not be in a *Leger-Book*, ſince the one without the other is abſurd: There may alſo be Caſes, wherein there is no giving or receiving, neither is there any abſolute Obligation upon any Perſon; yet this Method requires, that every Change and Poſture of Things, appear diſtinctly in the *Leger-Book*; and that, whatever Tranſaction makes the leaſt Alteration of the total State of one's Affairs, be duely recorded, without which, the Deſign of *Book-keeping* is not anſwered. For theſe Reaſons, it is abſolutely neceſſary, that ſome Accompts be uſed, which, for Diſtinction, I call *Imaginary*, whoſe Title may be arbitrarily contriv'd from the Nature of the Thing it relates to: I ſhall explain this by an Example or two. *Example* 1. Suppoſe I ſend Goods as Tobacco to Sea, conſigned

ſigned to my Factor at *Amſterdam*, the *Creditor* Side of the *Accompt* of *Tobacco*, muſt be made to ſhow, how it is diſpoſed of; a *Creditor* requires a *Debtor*, but there is no Perſon or Thing come in their Place to be made *Debtor*; for I cannot Charge my Factor, till he adviſes me they are come to his Hand, therefore I erect an Accompt in my *Leger* by the Title of *Voyage* to *Amſterdam*, &c. which I Charge, or make *Debtor* for the whole Cargo, and ſo it will ſtand till I am adviſed that they are Loſt, or come ſafe to my Factor, and then the Accompt *Voyage* is diſcharged, *i. e.* made *Creditor*, and my Factor *Debtor*; ſo it ſerves both to keep up the Balance of the *Leger*, and ſhews diſtinctly the State of my Affairs, for that particular. *Example* 2. Suppoſe a Perſon ſtands *Creditor* in my Book for 20 *l.* he accepts of 18 *l.* as compleat Payment, and to diſcharge my ſelf, I make him *Debtor* for the whole 20 *l.* but Caſh can be *Creditor* for no more than 18 *l.* realy given out of it, and it is neceſſary that ſome Accompt be *Creditor* for the 2 *l.* rebated to me, ſince he is made *Debtor* for it; in this Caſe, the *Accompt* of *Profit* and *Loſs* is made *Creditor*; For this I reckon ſo much gain'd, and therefore I carry it in to the general Accompt erected in the *Leger-Book*, to contain all the Articles of a Merchant's Gain or Loſs: The Nature of this Accompt ſhall be further explained below in *Chaper* II. *Example* 3. Suppoſe I conſign 20 *l.* in a Wager, the *Creditor* Side of my Accompt of Caſh muſt ſhew how much is given out; but what ſhall I make *Debtor*? This Perſon againſt whom I wager, can not properly be made *Debtor*, nor yet he in whoſe Hands the Money was conſigned, for it is only a Truſt with him to be given again, according to the Deciſion of the Wager, and he is not abſolutely my *Debtor*; but if we erect an Accompt in the *Leger*, called *Wagers-Accompt*, this imaginary Accompt may be made *Debtor* to Caſh, for my Money conſigned: And beſides the keeping up the Ballance of the *Leger*, I ſhall know at all Times by this Accompt, what Wagers I am engaged in, and and how they are decided. [See the Uſe of it in *Chap.* II.] But again, Suppoſe I am engaged in a Wager on Parole, *i. e.* without Congnation, here there is neither giving nor receiving, but as there are conditional Obligations, which put my Affairs in a new Poſture, there muſt be a Record made of the Tranſaction, and it is done thus, *viz. Wagers-Accompts Debtor*, to *Hazard-Accompt*, which is *Creditor*, and ſhews an imaginary Debt owing by me, which I am obliged to make effectual, if the Wager goes againſt me.

These imaginary Accompts are by ſome called *Mediate-Accompts*, as being put betwixt one Accompt and another, for preventing of falſe Charges, ſo the Accompt *Voyage* comes betwixt the Accompt of Goods ſhiped, and my Factor, who is not chargeable till he receive them. The *Wagers-Accompt* may alſo be ſaid to come betwixt the *Caſh* Accompt, and the Accompt of *Profit* and *Loſs*; for until the Deciſion, 'tis improperly called either Gain or Loſs. But not every imaginary Accompt is of this Nature, ſome are neceſſary that Tranſactions may be brought into the *Leger*, which, without ſuch Accompts, could not poſſibly be entred there, as the *Hazard-Accompt* above-mentioned. But there is yet another Species of imaginary Accompts, under which conditional Debts are recorded. To underſtand theſe, I ſhall in this Place, once for all, tell you,

That

That by a Man's being abſolutely bound for Payment of a Sum of Money (or any other Thing) to me, I mean he is ſo bound, as nothing but Payment can diſcharge, and I underſtand the ſame of my being bound abſolutely. A conditional Debt is, that which is due only upon Condition of a certain Event, the contrary whereof will diſcharge the Debt: It is found the beſt Way generally, to record theſe under *Mediate-Accompts*, becauſe in *Book-keeping*, we regard not only the Quantity, but the Quality of a Debt, as whether it is abſolute or conditional; and of theſe mediate Accompts ſome will be particular for one ſingle Perſon, but 'tis better when they can be made general Titles. For *Example*, Suppoſe I lend *A. B.* 100 *l.* upon Condition, that if his Ship arrive ſafe at *Amſterdam*, he ſhall pay the ſame with the Intereſt agreed upon, to my Factor, but if the Ship is loſt in her Voyage, I loſe my Money, which is called a lending Money upon the Bottom of the Ship; if therefore I erect ſuch an Accompt as *Bottomry-Accompt*, and make it *Debtor* to *Caſh* for my 100 *l.* the Tranſaction will be ſufficiently well recorded, and the *Bottomry-Accompt* is a Title, repreſenting all Perſons to whom I lend Money upon that Condition. [See more of this Accompt in *Chap.* II.] Now beſides, the Reaſon taken from their nor being abſolute *Debtors*, there is a Conveniency in ſuch *Accompts*, for we both ſave giving every ſuch Perſon a ſeparate Accompt, and by the Uſe of ſuch general Accompts, we can ſee at once all our Dealings of that Kind, and conſequently the State of Affairs in that particular Branch; and this leads me to another thing of very much Conſideration in this Method, which is, That *Accompts* may be more or leſs particular, as Buſineſs ſpreads, ſome Accompts may run into ſo great length, that by too many Particulars they grow confuſed, and it will be convenient to ſubdivide ſuch Accompts under various Titles, as the Nature of the Thing will allow. But there is an equal Confuſion in huddling too many Things together under one Title, which were better ſubdivided, and drawing out Things into many particular Accompts, which were more conveniently comprehended in fewer: The Sagacity of the Artiſt will appear in nothing more than this, for 'tis a true Sign of a good Notion to diſpoſe Things fitly. I ſhall trouble you with no more here, than this general Hint, becauſe I have another Place to be particular in, upon theſe Things; mean time 'tis fit to let you know, that there are ſome Accompts, which at firſt ſounding, will ſeem to be *Imaginary*, but are truly *Perſonal*, or *Real*, and contrived as general Accompts for Conveniency, to repreſent ſundry Perſons in like Circumſtance, with reſpect to me, and ſundry Things that may be conveniently brought under one Denomination: And tho' ſuch Accompts will be Exceptions from the general Rule above-mentioned, where I ſaid, every diſtinct Perſon and Thing muſt have an Accompt, yet if the Deſign be better obtain'd, the Exception is profitable, but yet we ſhall not find them ſo much of the Nature of an Exception, becauſe of ſome thing required to be common to all that are brought under one Title, whereby they are all as one Subject of a more general Nature.

§ VIII. The Account I have hitherto given of this Method of *Book-keeping*, its End, and the Means of obtaining the same by the *Leger*, is general, designed, and I hope, sufficient to explain the fundamental Notions and Principles of the same; and since much depends upon the right of apprehending of the first Principles of any Art, I shall sum up what has been already said, in few Words, *viz.*

1. To form the most universal Notion we can, of *Book-keeping*, let us consider a Merchant commencing a Trade, and having in Hand a certain Stock; this we may conceive under the Notion of a Body collective, divided or distinguished into several Members, of different Species, but of such a Nature, as to be capable of a continual Accession, Diminution, or alternately, and yet still retain the same Name of his Estate or *Stock*. All the Alterations this Body can sustain, are but Encrease, Decrease, or the change of one Thing for another of equivalent Value; the Encrease and Decrease relates to the Quantity, or Bulk of this Body (*viz.* a Man's *Stock*) in its Value in Money, and not its Bulk as to the Weights and Measures; therefore, the *Encrease* ariseth from this, That we receive Money or Goods of a greater Value for a Lesser given out, and *Decrease*, when we give more than we receive; and when we receive equal Value, the Body remains the same in its Worth, tho' it may be changed as its constituent Part.

Now, Words or Writing, are the Picture or Representation of a Thing, and in the present Case, I conceive the Merchants Books of Accompts, as a Representation, or Image of his Eastte, which being a Thing subject to Alterations, according to the various Additions, Substractions, and other Changes, the Course of his Negotiations brings it to, to have always the true Picture, it must suffer the same Changes with the Original, *i. e.* since every Transaction by the Merchant, or his Doers, makes some Alteration, if not in the Value, at least in the Posture of his Affairs: Therefore, a faithful Record ought to be made of every Thing that any way concerns a Man's Business, and this is done in a plain Narration of Matters of Fact in the *Waste-Book*, as already described.

But 2. The Design of *Book-keeping* being some Thing above the Use of the *Waste-Book*, *viz.* That a Merchant may at any Time know the State and Posture of any Particular of his Affairs, or of the whole, with the least Trouble and Confusion, which cannot be done by the *Waste-Book*, because the Transactions are scattered in it, according to their Dates; This Defect is supplied, and the Design obtained, by the *Leger*, which contains all the Transactions of the *Waste-Book*, but in such Form, that all relating to the same Subject, ly together, which is performed, by giving every Person and Thing a distinct Space in the *Leger*, with their Names marked on the Head of the Space, *Debtor* on the Left, and *Creditor* on the right Side, into which Spaces are brought, all the particular Transactions that relate to that Subject, in the Form of Debt and Credit, as these Terms have been explained. Accordingly, 3. Every Transaction of the *Waste-Book* must be resolved into its proper *Debtors* and *Creditors*, by Help of what is already said, (and some more particular *Instructions* following) *i. e.* the Transaction must be recorded in the *Leger-Book*, on the proper

proper Side of these *Accompts* which are the Subjects thereof, in the Stile of *Debtor* and *Creditor*; and therefore every Transaction must be at least twice written in the *Leger*, once upon the Debtors Accompt, and again upon the Creditors Accompt, whereby there is kept up a continual Balance, and every Accompt in each Article thereof, hangs upon some other Accompt; which makes a very remarkable and useful Dependence and Concatenation of the Accompts. But, 4. Because not every Man, or Thing, named in a Transaction, is properly the Subject of it; therefore by the proper Subject of any Transaction, I mean, these *Men* or *Goods* mentioned in it, whose *Accompt*, *i. e.* the State of whose Affairs with the Merchant or Owner of the *Books*, has suffered any Change or Alteration by what's done; and this the Narration of the *Waste-Book* will easily discover. And then, 5. To know whether these Persons and Things are Debtors or Creditors, let it be remembred what has been said of the Use of their Accompts in § IV; or take it in short thus, *viz. Every Man's Accompt* is *Debtor* for (or shows on the Debtor Side) what he owes me; and *Creditor* for what I owe him. *Every Accompt of Goods* is *Debtor* for the first Cost and Charges of every Quantity purchased and received of that Kind, and *Creditor* for what's disposed of. *The Accompt of Cash* is *Debtor* for all the Money received, and *Creditor* for what I gave out. [See the last Part of § VI.] But, *Lastly*, There are also *imaginary Accompts* useful in this Method, which beside the keeping that admirable Balance in the *Books*, serve to shew the various Situation of Affairs; so that as one Accompt clears or comes in Place of another, it is recorded in the *Leger-Book*, by *Debtor* and *Creditor*, and this *Book* being looked into at any Time, shows, not only the State of any particular Part, but of the whole *Body* or *Stock*, whether it has encreased or diminished, and what are its constituent Parts, by the Balance of the *Accompts* compared in their *Debt* and *Credit*, whether they are *personal*, or *real*, or *imaginary Accompts*; for even in these there will be a Balance of imaginary Debts and Credit, which as truly belong to the State of a Man's Affairs, as the more absolute, tho' they depend upon certain Events to make them effectual; for until these Events happen, they must be considered as Articles that may possibly be effectual, either for, or against the Owner.

§ IX. The *Instructions* already delivered, are general; you see the first *Notions* and *Principles* explained, both in the *Design* and *Reason* of them; I reckon it an Advantage to have a general View of the Art, before we come to Particulars; for all regular Knowledge proceeds from Generals to Particulars, it being the easiest Way to acquire Knowledge, to begin with general Principles, as if no more were to be known, and then to proceed to Particulars. The Description of this Method of *Book-keeping*, which I have given, well remembred, will give you such an *Idea* of the Thing, as will make other Rules more intelligible, because these must always be referred back to, and compared with this general Account of the Method; for here you have the fundamental Principles explained: I shall in the next Place proceed to more particular *Instructions*, but must first explain another *Book* used in this Method.

The

THE *Leger-Book*, is the principal *Book* of *Accompts*; all other *Books* that are made Uſe of, are only ſubſervient to the *Leger*: I ſhall ſpeak of the moſt conſiderable of them in another Place, and ſhall now only deſcribe one, which is the moſt uſeful, tho' not abſolutely neceſſary, it is called the **Journal**, and is only the *Waſte-Book* in another Stile; it contains every Thing that's there, in the ſame Order of Dates, being ruled like it; ſo far it partakes of the *Waſte-Book*: But whereas this narrates ſimply, that Things were ſo and ſo done, the *Journal* reſolves every Thing into its proper *Debtors* and *Creditors*, *i. e.* having duly conſidered the Tranſaction of the *Waſte-Book*, ſome of the Perſons and Things mentioned are diſtinguiſhed as *Debtors* and *Creditors*, and the Narration of the Fact is made at large, as in the *Waſte*. And thus the *Journal* partakes of the *Leger*, and is preparatory to it, becauſe it ſhews what are the proper Subjects of the Tranſaction, and which is *Debtor* and *Creditor*, or upon what Accompt, and what Side of the Accompt, it is to be recorded in the principal *Book*, the *Leger*; the deſigned Uſe of it is, to prevent wrong Entries in the *Leger*, into which Things muſt be very cautiouſly taken: But the *Debtors* and *Creditors* being marked in the *Journal*, in tranſporting from this to the *Leger*, Things paſs under our Conſideration once more, and in Caſe of Miſtake, can be rectified e're they enter the *Leger*, where every Thing muſt be very fairly written.

THEREFORE, the following particular *Inſtructions* ſerve for *Journal* Entries, *i. e.* finding the true *Debtors* and *Creditors* in every Tranſaction (conſult the following practical *Journals*, for any Thing elſe that relates to the Method) and then by Help of the particular Directions following, tranſport the Tranſaction into the *Leger* upon the proper Sides of the Accompts that are made *Debtors* and *Creditors* in the *Journal*, each for the Value belonging to it; or neglecting the *Journal*, (which yet is not adviſable) we may enter Things from the *Waſte* into the *Leger* immediately, having found the proper *Debtors* and *Creditors* by the preceeding and following *Inſtructions*; therefore in making up the *Journal* (if you keep one) your Eye muſt be always on the *Leger*, becauſe the other is only in Order to this; and as it is the diſtinct Notion of the *Leger* Form, that only can make you underſtand the true Import of the *Journal* Stile, ſo it is very neceſſary to remember well the preceeding general Deſcription of the *Leger Records*, that what follows may be better underſtood.

CHAP.

CHAP. II.

Containing more particular Inſtructions, *eſpecially for finding the proper* Debtors *and* Creditors *in every Tranſaction.*

§ I. THE preceeding *Chapter* contains ſuch an Explication of the *fundamental Principles* and *Rules* of *Book-keeping*, as I thought neceſſary for the forming a clear and comprehenſive *Notion* of it, and underſtanding the Effect and Tendency of every other more particular *Rule*, all which are nothing but theſe general *Rules* applied. This, and the III *Chapter*, contain ſuch particular Rules, and in ſuch Method, as I judge may be ſufficient to furniſh any Body, with a compleat *Notion* of this regular Accompting; eſpecially, if they'll take Pains to compare the Variety of *Examples*, which I have provided them with in the following practical *Set* of *Books*; but particularly as to the *Inſtructions* of this *Chapter*, let me advertiſe you, That as the Method is new, ſo you muſt not think your ſelf diſappointed, if you find not here a tedious Collection of *Queſtions* and *Anſwers*, put upon every Caſe and Circumſtance that may be ſuppoſed, and the moſt of them very trifling; I could not perſwade my ſelf, That he who would carefully read the preceeding *Chapter*, would need this; nor can I think it, without that, the moſt inſtructive Way; my Reaſon is this, When we have nothing but a Profuſion of *Queſtions* and *Anſwers*, which tell us, That when ſuch a Thing occurs, we are to make ſuch an Accompt *Debtor*, and ſuch *Creditor*, we are left to ſeek a *Definition* of the Deſign and Uſe of ſuch *Accompts*, from the many *Applications* that are ſcattered up and down among theſe Queſtions; by which Means, you may go far, e're you know what you are doing, and ſhall find much Difficulty to get, from ſuch Helps, a true and comprehenſive *Idea* of the *Art*, ſo as to be able to apply it in other Caſes than what are thus laid before you: But if inſtead of this Method, I ſhall teach under diſtinct and proper Heads, what *Accompts* are to be opened in the *Leger-Book*, and give you in a general *Definition*, (with ſuch particular Notes, as ſometimes will be uſeful for greater Clearneſs) the Contents of the *Debtor* and *Creditor* Side, you'll at once ſee the whole Deſign and Uſe of that Accompt, and what Demand can be made from it, of the State of that particular Subject it relates to; *For this Book-keeping, is the forming of Accompts for every different Subject, in Order to know at all Times, the State thereof.*

To

To perform this with the greateſt Advantage, I chuſe this Method, *viz.* 1. To diſtinguiſh all Tranſactions with Reſpect to their Kind, as they are for a Man's proper Accompt, or that of another, or of both theſe together. 2. I ſhall make neceſſary Sub-diviſions of theſe; and after a general View of the more material Tranſactions that occur under each Head, I ſhall ſhow you what Accompts are to be opened, or erected in the *Leger-Book*, and how theſe *Accompts* are to be uſed, *i. e.* what they muſt contain on the Debtor and Creditor Sides, or be made Debtors and Creditors for, and then you'll eaſily ſee, whether theſe *Accompts* uſed after ſuch a Manner, record the whole Tranſactions of the propoſed Buſineſs; and that in ſuch regular and diſtinct Order, as there be no falſe Charge, and that we may find a ready Anſwer to any Demand: In ſhort, you'll have by this Method, not only *Inſtruction*, how to enter every Tranſaction into the *Leger*, but the Reaſon of the Thing, will be alſo manifeſt after it is done, by comparing the Definition of the ſeveral Accompts directed to be kept, with the End to be obtained by them. To the firſt Thing propoſed,

All Tranſactions belong, and are reduceable, to theſe three principal Heads. 1. **Proper Trade or Accompts**, which are ſuch as concern a Man's own Affairs, where all is for his own Behoof. If negotiate by himſelf or his Domeſticks, they are called *proper domeſtick Accompts*; if by others who ſerve him in Commiſſion, as his Factors, they are called *proper Foreign Accompts*.

2. **Factorage Accompts**, are the Tranſactions managed by one Perſon, (as Factor) for the Accompt, and by Order of another, (the Employer.)

3. **Company-Accompts**, are the Tranſactions of a Trade, wherein two or more Perſons, are concerned as *Partners*.

§ II. Before I enter upon the ſecond Thing propoſed in § I. *viz.* giving particular *Inſtructions* under theſe diſtinct Heads; and in Order alſo to their being more uſeful, and readily applied; theſe previous general Things muſt be conſidered, and carried along with us in Practice, *viz.* 1. Every Tranſaction recorded in the *Waſte-Book*, muſt be reſolved into Debtors and Creditors, *i. e.* of the Perſons and Things mentioned, ſome are to be made Debtors, and ſome Creditors, for the Sums mentioned, and in ſome Caſes *imaginary Accompts*; this has been already ſaid, but in Order to it, you muſt, 2. Carefully diſtinguiſh to which of the foreſaid *Heads of Trade* the Tranſaction belongs; that you may more readily find out your *Inſtruction*, and make Uſe of the *Accompts* that are proper to each, as they ſhall be deſcribed. But further, *3tio*, You muſt duly conſider what is the preciſe Matter of Fact, or Thing narrated, as preſently done, or which you are then firſt adviſed of, in any Tranſaction; for this is the Thing to be now ſtated in Form of Debt and Credit, to do which aright, 'tis neceſſary to mind and conſider the Uſe of the ſeveral Accompts belonging to that Head, and compare them with the preſent Fact, which to prevent Miſtake, you muſt carefully diſtinguiſh from what's mentioned as formerly done, with which the preſent has ſome Connection; for to reflect upon what Record was then made, will be helpful at this Time: In ſhort, it is needful

needful to consider in what State this Particular stood last, (if any Thing relating to it has preceeded) for as the State of Things changes, so must the State of the Records; so that as one *Accompt* comes in Place of another, (according to their several Uses) the one is to be charged, or made Debtor, and the other discharged, or made Creditor, and it is thus that the admirable Balance and Connection of the Accompts is maintained. The following *Instructions*, indeed, do not say in every Case, what Accompt is Debtor, and to what; but they'll shew you separately and distinctly, which of the Subjects mentioned in any Transaction is a Debtor, and which a Creditor, by a due Comparison of the Use of these Accompts, with the Narrative of the Transaction; also what *imaginary* Accompts you are to use; and for the Sum belonging to each, that will also be plain from the forefaid Comparison, so that you cannot miss the Connection, because these Accompts that you find, by a separate Examination, Debtors and Creditors for the same Article, are the relative Debtors and Creditors, and must be made Debtor one to the other. 4. In the *Journal*, the Debtors and Creditors are both distinctly marked, tho' we find only the Word *Debtor* mentioned; yet the Creditors are mentioned distinctly, tho' not so directly: For we say *A*—Debtor to—*B*, *&c.* which constitutes *B* the Creditor very distinctly, from the known Sense and Relation of these Terms *Debtor* and *Creditor*, but in the *Leger*, the Transaction is recorded on the proper Side of both the *Debtor* and *Creditor* Accompts, the one pointing distinctly to the other, by this Stile, *A* Debtor to *B*, for *&c.* and on *B*'s Accompt thus, *B* Creditor by *A*, for *&c.* 5. In some Transactions, there will be but one Debtor, and one Creditor; but by the Conditions of some other Transactions, there will be one Debtor, and several Creditors, and contrarily; or several Debtors and several Creditors: The Record must be made in the *Leger*, on every one's Accompt for their Part, which the Narrative of the *Waste-Book* will shew. Now, where there is one Debtor and more Creditors, and contrarily, you find in the *Journal*, *A* (for Example) Debtor to *sundry Accompts*, and after the Narration, you have the Creditors mentioned, *viz.* to——such and such Persons and Things, or imaginary Accompts, for the several Articles: Or, *sundry Accompts*, Debtors to *A*, and after the Narration, you have the Debtors mentioned, *viz.* such and such Persons, *&c.* for the several Articles. But in the last Case, where I suppose there may be sundry Debtors and sundry Creditors, as it falls out more rarely than the other, so also there would be a greater Difficulty to express this Case neatly, and with a distinct Connection of the Debtors and Creditors, in the *Journal*: But we may always shun this, by dividing the Transaction into two Parts, wherein we shall have one Debtor and sundry Creditors, or contrarily; as you find remarked in some Transactions of the second *Journal*.

But again, we must *observe*, That some for brevity Sake, would have this Phrase of *sundry Accompts* brought into the *Leger*, not as the Title of any Space, but where there is one Debtor, and sundry Creditors, or contrarily, upon that one Debtor's or Creditor's Accompt, they say, To, or by sundry Accompts for the total Sum, and make each of these sundry Accompts, Creditors or

Debtors in their own Spaces, for their respective Parts. Thus they make less Writing in the *Leger*, but it has this Disadvantage, that when we look on that Accompt where we find, *To*, or *By sundry Accompts*, we shall not know what these Accompts are, nor the particular Circumstance of the Transaction, without going back to the *Journal*; and therefore I would rather mention every particular Accompt distinctly, in as many Articles, (as I have done in the following practical *Books*) which is but small Trouble, and we gain a View of the Transaction more distinctly; for I think the Circumstance of Things ought to appear in the *Leger*. Yet there are some Cases, where it may be conveniently used, which you'll find marked in their Places. And this brings to my Mind another Precept of some Authors, *viz.* That every Article of Debt or Credit, should be expressed in the *Leger* in one Line, the Reason alledged is, That the principal Office of the *Leger*, is to have *Accompts* erected for every *Subject*, wherein are recorded all the Transactions relating thereto, in Order to know the true State of it at all Times; and this is thought sufficiently well done, if every Article of Debt and Credit be truly set down to the *Accompt*, tho' the Grounds and Circumstances be ever so briefly narrated; because when the Accompt comes to be examined, we can have Recourse to the *Waste* or *Journal* for the particular Circumstances: This is a Matter altogether arbitrary, and every Body, may do as they will; if they are pleased with the Conceit of expressing every Article in one Line, I advise them to provide very large Paper; but I see no Reason to be confined in this Matter, indeed the Narration in the *Leger* ought to be as short and neat as possible; but I think there ought to be as much of the Circumstances of Things narrated, as may bring the rest easily to his Mind (at least) who is *Book-keeper*, that when he has Occasion to look into the Accompts, he may easily know the State of Things; but yet the other Extreme of too long Narrations must be shunned, whereby many Things will be referred to the *Journal*. As there is no general Rule for this, but *Discretion*, and a due Consideration of the Use of every Accompt, whereby we know what may properly be demanded concerning it, and consequently what will be fit to narrate; so I refer you to the following practical *Legers*. The only Things fixed are, that every Article must have at least the Date, which is set in the Columns appointed for it in the Margin; then follows *To*, or *By* the Name of the Correspondent Creditor or Debtor, (for the Name of the Debtor or Creditor in whose Accompt or Space we are presently writing, is never but once written, and that is on the Head of the Space, and you must therefore suppose it repeated to every Article before the Words *To* or *By*) and then the Sum of Money is set in the proper Columns; and before the Money Columns is a small Column, wherein is set against every Article of the Debtor Side, the Number of the *Folio* of the *Leger* wherein the Creditor's Accompt (for that Article) stands: And on the Creditor Side is set, the *Folio* where the Debtor of every Article is to be found: Also upon the Debtor Side of a Man's Accompt, 'tis fit to tell the Term of Payment, and if it be due upon Demand tell so; upon an Accompt of Goods, the Price and Quantity must be expressed, the Quantity in an inner Column, as you see in the *Books*; but where there are several Par-

Parcels of different Quantities, Marks and Prices, these may be referred to the *Journal*, and the total Quantity and Value expressed.

I have one Thing more to add here, as to the Practice of the *Leger*, *viz.* That assoon as you enter, or open an Accompt in the *Leger*, *i. e.* when you write the Title on the Head of the Space designed for it, write also its Name in the *Index* or *Alphabet-Book*, with the Number of the *Leger Folio* where it stands. This Entry of Accompts into the *Leger*, is done when you transport from the *Journal*; for having the proper *Debtors* and *Creditors* expressed in the *Journal*, (or finding them immediately from the *Waste-Book*) in Order to make the Record in the *Leger*, first consult the *Index*, whether these Accompts that are the *Debtors* and *Creditors* stand already in the *Leger*; if there stands an Accompt already opened for these *Debtors* and *Creditors*, turn to their respective Spaces, and on the proper Side record the present Transaction: But if there is no Accompt for these Subjects already opened, then you must presently do it, and also enter them in the *Index*, then proceed to your Transaction. You must be sure that the same Accompt be not twice entred in your *Leger*, while the first Space it was entred in can hold any Thing; and when that is full, you must transport to a new Space, by carrying the Sums of the Debtor and Creditor Side of the old, to the new Accompt, as you see done in the *Accompt* of *Cash* in the following *Leger*.

§ III. I now come to the second Thing proposed in § I. of this *Chapter*, and my Business here is, as I promised, to give, under distinct Heads, a general View of the Transactions that belong to, and occur in that Kind; then I'll show what Accompts are necessary, or what I think most proper to be opened in the *Leger*, and describe their Uses, unto which these Transactions being brought in Form of Debt and Credit, the State of that Particular shall be clear and distinct, and an Answer to any Enquiry about it may be readily found: And by this Method, you'll have a short, easie, and general Plan, of the whole Records of each Particular, [See § I. of this *Chapter*] by which you can always have the true Sense and Tendency of what you do by these *Instructions*. And after this general View of the Transactions and Records, I shall add such *Notes* and *Directions* as may be useful for the greater Clearness, and the more certain Application of the preceeding *Accompts*, whose Definitions I would have well remembred as general Rules.

The managing of one's proper Affairs, is the first, and most necessary Thing to be known, without which no Man can undertake for another: The right Understanding of this Kind, makes easie Work with the rest. Therefore I begin with,

§ IV. Proper Accompts, [*See* § I.] *and firſt of the* Accompt *of* Stock.

THE *Waſte-Book* begins with an *Inventary* of a Merchant's Eſtate and Debts. The firſt Queſtion then is, How this muſt be entred into the *Leger?* From the general Rules and Notions already explained, you would eaſily proceed ſo far, as to give every Perſon and real Thing within the *Inventary* an Account, to make the Perſons who owe Debtors, and they to whom you owe Creditors; alſo to enter upon the Debtor Side of the real Accompts, the Quantity and Value of each Kind that belong to you. But where are the correſponding Debtors and Creditors? For there is no Accompt to be erected bearing the Merchant and Owners Name expreſly. This is ſupplied by an Accompt called *Stock*, which in a Manner perſonates the Owner in this Caſe, and is made Creditor by all the Subjects of the Inventary that compoſe his Eſtate, which Subjects are made *Debtors* to *Stock* in their reſpective Spaces in the *Leger*, each for their Part: And becauſe out of his Effects muſt his Debts be paid, therefore *Stock* is made Debtor to every Perſon to whom you owe, for their ſeveral Debts, who in their Accompts are Creditors by *Stock*; upon which Account, your Inventary thus made, will always appear diſtinctly, upon the Creditor Side your Effects, and on the Debtor Side your Debts; and the ſeveral Subjects of this Stock-Accompt having their Places in the *Leger-Book*, ſtand ready to receive whatever Alterations the Courſe of Trade brings about; what new Subjects ariſe are to be allowed new Spaces, and as Accompts come in Place of one another, ſo are they mutually charged and diſcharged, according to the preceeding general Rules. Thus your *Leger* is fairly begun, and you have, by what is ſaid, an *Idea* of the opening and ſpreading of a regular Accompt. The *Stock* you are to look upon as the Root, from which all the other Accompts in the *Book* (as far as they are for the Owner's Behoof) do flow; for whether there be Encreaſe or Decreaſe, or Equality, by the various changing of ſome Things for others (in which trading does entirely conſiſt) it is the capital *Stock* that is affected, and either raiſed or diminiſhed in Value, or ſimply changed in its conſtituent Parts, retaining the ſame Value; now when Encreaſe and Decreaſe happens thro' the Courſe of the Negotiations, it may properly be demanded, where that ſhall appear? It belongs indeed to the State of the *Stock*, and might juſtly be charged there, Encreaſe, or what is clear Gain on the Creditor Side, and Decreaſe or Loſs on the Debtor Side; but to prevent Confuſion in this Accompt, it is more convenient and agreeable to the Nature of regular Accompting, to have a ſeparate *Accompt* of *Profit* and *Loſs*, which is mediate betwixt the *capital Stock* and the *Traffick*, in which the Gains are ſet upon the Creditor, and the Loſſes upon the Debtor Side, and there a State of the Encreaſe or Decreaſe may be made, and from thence carried to the *Stock* in Totals, as there is Occaſion: Nor is it neceſſary, that every Article of Gain or Loſs ſhould appear on this Accompt, aſſoon as it has Being; ſome indeed are of that Nature,

which

which cannot be delayed; but others may ſtand upon theſe *Accompts* which produce them, until we think fit to make a Balance of the Accompt, in Order to know the State thereof. For Example, an Accompt of Wine is opened in the *Leger*, wherein is entred on the *Debtor* Side the Quantity purchaſed with the firſt Coſt and Charges; if theſe Wines are diſpoſed of at ſeveral Times, and this recorded on the *Creditor* Side, there is no Neceſſity, nor would it be at all convenient to calculate the Gain or Loſs at every Sale, but when the whole is diſpoſed, or when we propoſe to know how the total State of Gain or Loſs ſtands, then may it be done, and the Gain or Loſs ſet upon the leaſt Side, and carried to the oppoſite Side of the Accompt of *Profit* and *Loſs*: Of which Accompt, expect to hear more a little below; yet thus far was very proper in this Place, becauſe of its Relation to the *Stock-Accompt*. But beſides the State of Encreaſe and Decreaſe of the *Capital*, which the Ballance of the *Profit* and *Loſs* Accompt, (*i. e.* the Difference of the Debt and Credit thereof, or of the Loſs and Gain) will ſhew (ſuppoſing always that the Articles of Gain or Loſs that ariſe from every Accompt be duly gathered into the Accompt of *Profit* and *Loſs*.) There may be a change of the State of the *Stock*, as to its conſtituent Parts, which is the effect of the various toſſing this Stock about in Trade, and the frequent Changes that are made of one Thing for another in that Courſe. For the Encreaſe or Decreaſe that happens in the Tranſition, we have ſeen where that is to be found; The Queſtion now is, How the Alterations that befall the Members of the Stock ſhall appear? None of theſe will be on the Accompt of *Stock*, becauſe, according to the fundamental Rules, as Things change and come in place of one another, they are charged and diſcharged in their particular Accompts; It is plain therefore, that the preſent State of the *Stock* can only be known, by examining the State of every particular Accompt, by which we may find what Effects of every Kind we have, and what Debts are due both to and by us; Theſe being all collected into an Accompt called *Ballance*, will ſhew us the preſent and true State of our *Stock*. I inſiſt no more here on this Accompt, becauſe it will come to be expreſly treated of hereafter, and ſhall only make this Remark, That as the *Stock-Accompt* with its Members, and theſe variouſly changed by the future Negotiations, give us an Idea of the opening and ſpreading of a regular Accompt, ſo will the Beauty of this Art appear as agreeably, when we ſee how orderly theſe manifold Accompts are cloſed and ſhut up again, and finally terminate in this one Accompt of *Ballance*, which preſents us with the true State of Affairs, after all the Alterations that have happened, ſince the making up of our laſt *Inventary*: For as this *Accompt* of *Stock* is the *Root* or *Capital*, and its Branches the Subjects of the future Tranſactions, ſo the *Ballance-Accompt* is the *Metamorphoſis* of it, ſhewing, how, by the Courſe of Trade, the ſeveral Members are changed, ſome being encreaſed, ſome decreaſed, others expunged or lopt off, and new ones grown up. So much in general, becauſe of the Connection of what I have been diſcourſing: When you come to the particular Applications, it will be profitable to turn your Mind to theſe Reflections.

BEFORE I go further, allow me to repeat the Sentiment of that Author mentioned in the Preface, upon this Subject: *Says he.* "The Art of regular "Accompting, depends wholly upon this Supposition, *viz.* That every Thing "negotiated comes out of something, and goes into something, having (as they "say of Motion) its *terminus aquo & ad quem.* But this further, That if there "happen any Encrease or Decrease of the whole, or any Part in the Tran- "sition, there is a common Receptacle, or Place, which receives or furnisheth "exactly the same; so that however spaciously the Books are branched out, "there is conserved a perpetual Par, or Ballance of the whole." [By this common Receptable, he means the *Accompt* of *Profit* and *Loss.*] "Therefore, "*(say he)* To begin a regular Accompt, there must be a Fund, or Capital "Stock, out of which all the Accompts that may possibly grow Waste, Encrease, "or continue in Par, must flow. And to begin a Set of Books, with the first "Thing that stirs, and so go on as Things move, is a heedless Undertaking, "and will not go on well, nor close tolerably; For whither is the *Profit* "or *Loss* to go?" The Author, I think, means, That where there is a Stock to begin upon, the first Thing we should do is, to enter that in Form into the *Leger.* It would be mad Work indeed, in this Case, to begin with the first Thing that stirs: For, suppose the first Transaction is, that I have sold a Parcel of Wine to *A.* I make *A. Debtor* to *Accompt* of *Wine,* which is therefore *Creditor.* But how can an *Accompt* of Goods be *Creditor* before it be *Debtor? i. e.* How can you say there is so much disposed of, when the Accompt shews nothing of what you had to dispose? It ought therefore first to be entred on the *Debtor* Side of the Accompt as an Article of *Stock.* In short, where there is a Stock of Things in Hand to begin upon, (tho' perhaps there is more Debt than its Value, that makes no Difference) the Books must be begun regularly in the manner directed, else 'tis impossible to answer the Design of *Book-keeping.* But where we suppose there is no *Stock,* and that the Trade is begun upon Credit, then we cannot have a *Stock Accompt,* and must begin with what stirs first, and yet the Accompts will go on very well: For the first Things taken up on Credit are made Debtors to the Persons who give the Credit, and so the Accompts proceed, as the State of Things changes. As for the *Gain* and *Loss,* it goes to the Accompt of *Profit* and *Loss,* the neat Gain of which will be the Owner's *Stock,* when he makes up an Inventary from the Ballance of the Accompts, and the constituent Parts thereof will appear on the Accompt of Ballance, which will make the *Stock-Accompt* of a new *Leger.* [See *Chap.* 3*d.*]

I have one Objection to answer ere I proceed, I'm aware some may complain, that I have defined the Use of the *Stock-Accompt* too generally, and that I should have shown under what Title every imaginable Article of an Inventary is to be entred. I Answer, That the general Definition is sufficient to give a perfect Idea of the Use of that Accompt, which is all that is proper in this Place. The Use of a Man's Accompt, and of an *Accompt* of *Goods* and *Cash,* are already explained; which is sufficient to shew, whether *Stock* is *Debtor* to, or *Creditor,* by the Persons and Things mentioned in the Inventary: And to make Suppositions here, which would require other Accompts not yet explained, were very

very Prepoſterous; therefore in the Inventary of the *Waſte-Book* No. I. following, I have put no Articles that need any other Inſtruction. When you have read and underſtand the Uſe of the other Accompts that are hereafter explained, then make what Suppoſitions you pleaſe; accordingly you find other Caſes in the Inventary of the *Waſte-Book* No. II. and alſo in that made from the Ballance of the 2d. *Leger*. Your Inventary being thus poſted into the *Leger*, follows the daily Tranſactions of your Trade, which muſt be poſted in Form, by help of the following Inſtructions.

§ V. Proper Accompts, *Domeſtick*.

THE moſt ordinary and material Tranſactions that occur here, are, 1ſt, *Buying*. 2d, *Selling*. 3d, *Bartering*. 4th, *Receiving*. And 5th, *Making Payment of Debts*. In *Buying* and *Selling*, we give or receive for Goods, either *Money*, *Bills*, or *Aſſignations* on a third Perſon; or there is an Obligation for Payment, on the Buyer; which is called *Buying* and *Selling* on *Time*. In *Barter* (which is alſo *Buying* and *Selling*.) one kind of Goods is given for another, or perhaps both are of one Kind; and Superplus given, received, or owing. In *Payment* of Debts, we give and receive Money, Goods, or Bills and Aſſignations. In all which 'tis plain, there is no *Accompt* required but thoſe of *Men*, *Goods* and *Caſh*, whoſe Uſes have been already deſcribed, and if minded, will be ſufficient Inſtruction how to find the *Debtor* and *Creditor* in any of the foreſaid Caſes. But leſt it be objected, that I have done no more than directed to make a Perſon *Debtor* who is due to me, when I ſhould have told what makes him *Debtor*, tho' common Senſe will always ſhew this; yet to take away the Objection, which is as plain as poſſible, I ſhall expreſs the Uſe of theſe *Accompts* in the following *Rule*, with a direct Regard to your Aſſiſtance in poſting from the *Waſte-Book* into the *Journal* or *Leger*.

General RULE *for the Uſe of the* Eſſential-Accompts.

Every Perſon is made *Debtor*, who by the Conditions of the Tranſaction is become due, or accountable to me, for any Sums of Money, which he may be theſe ſeveral Ways, *viz.* 1*mo*, By receiving *Goods* or *Money* from me at this Date for his Account, or if I have ſent the ſame to him or elſe where, by his Order; nothing being preſently received by me for the ſame. 2*do*, By an accepted *Bill*, *drawn* by him, or his Correſpondent by his Order on me, or my Correſpondent by my Order, payable to another; or *remitted* by me, or another for my Account, to him, or another for his Account, no Equivalent being at this Time received by me. 3*tio*, By an *accepted Bill* or *Aſſignation* drawn on him, payable to me. Again, every Perſon is made *Creditor* to whom I owe or am accountable, which falls out in Circumſtances directly oppoſite to the former, *i. e.* change

the

the word *me* into *him*, and *him* into *me*, and all the former Cases are reversed, and he becomes *Creditor*.

Every Accompt of Goods is made *Debtor* for the Value received by me at this Date for my Accompt, and for the present Charges; (and the Accompt must also be *Debtor* for all subsequent Charges.) Again, every Accompt of Goods, is made *Creditor* for the Value presently given out, of that which was formerly entred on the Debtor-Side of the Accompt.

Accompt of Cash is made *Debtor* for all that I receive, and *Creditor* for all that I give away, at this Date.

The Transactions mentioned, 'tis true, are not all that occur in *proper Domestick-Trade*, nor have they all the Circumstances that may be supposed; I shall do what more I think needful immediately; but the Design of putting at present, no other Case than where the Debtors and Creditors are all *personal* or *real*, was, that I might make a Rule, which might be universally applicable: Accordingly, *Men*, *Goods* and *Cash*, being the essential Subjects of Accompts, and the preceeding Rule, teaching the Use of these Accompts in the *Leger*, is certainly a general Rule, to which there is no Exception, and must in no Case be violated, but applied in every Transaction, as far as it will go; *i.e.* so far as the Things narrated in the Transaction as presently done, or then first advised of, with Respect to the Persons and Things mentioned in it, do agree to the Conditions of the Rule: Therefore, for the more certain Practice, mark distinctly one after another, the Persons and Things mentioned in the Transaction, and make each of them Debtor and Creditor, as the Circumstances agree to this Rule.

Having hereby found the *personal* and *real Debtors* and *Creditors* that are in any Transaction, if for other Circumstances contained in it, there be something more particular required in the Application, let what shall be further delivered direct you; but if you can have neither *personal* nor *real Debtors* and *Creditors*, then, some *imaginary Accompt* (such as shall be explained below) must be used, in order to answer the End of *Book-keeping*, which requires every Thing to be recorded, that every Change and Posture, and the whole Steps of our Affairs, may at all Times clearly appear.

Mind the following Practical-Notes.

First, Concerning *Bills*, you are to take notice. *1mo*, That some have only two Persons named in them, *viz.* the *Drawer*, to whom it is also payable, and the *Accepter*; this Kind is given as a Security for something the Accepter owes the Drawer. *2do*, Some have three Persons, the *Drawer*, the *Accepter*, and a third Person, to whom it is payable, called the *Presenter* or *Receiver*. Now if the *Bill* is for the *Drawer*'s Account, he is also said to be the *Remitter* for hereby he remits, gives or sends Money to the *Presenter*; the *Drawer*, 'tis plain, must therefore have Correspondence with both the other two; but there may be a fourth Person concerned in the Bill, (tho' not named in it) this

falls

falls out, when a Perſon procures a Bill to be drawn by another, payable to his Correſpondent (or to himſelf, which he indorſes to his Correſpondent) by the Drawer's Correſpondent; this fourth Perſon is called the *Remitter*. Which of theſe Perſons are the Debtors and Creditors in each of their reſpective Books, is ſufficiently ſhown in the preceeding general Rule: and you'll obſerve, that in the Caſe of four Perſons concerned, the *Remitter* has no Accompt with the *Accepter* (as far as relates to this Bill) or he with him, nor the *Receiver* with the *Drawer*, or he with him; but where there are only three Perſons concerned, each has an Accompt with the other two. A Bill may come thro' ſeveral Hands, by Indorſements; but if it is known, for whoſe Account it is drawn or remitted, and to, or by whom payable, the ſtating it to the true Debtor and Creditor, will be plain. 3*tio*, Bills are diſtinguiſhed into *Domeſtick* and *Foreign*; theſe are *Domeſtick*, where all the Perſons concerned live in the ſame Country, andthere is no Gain or Loſs to any Perſon by the Draught, being remitted, drawn, paid and received for equal Value to them all, and are nothing in effect different from a Precept or Aſſignation, given for Payment of Debts, or Effects preſently received. Theſe are *Foreign*, where the Drawer and Accepter live in different Nations, and have different *Species* of Coin, upon which there may be Gain or Loſs, according to the Courſe of Exchange, *i. e.* as the Coin of the one Country is valued in the other, at differeut Times: Theſe are properly Bills of Exchange: But even where all are within the ſame Country, if we ſuppoſe the Drawer receives more than the Contents of the Bill, you may call that a Domeſtick Bill of Exchange, the *Superplus* is taken for accomodating the *Remitter* or *Preſenter*, with Money in that Place where the Accepter lives, which is more conveniently remitted or carried by Bill, than in *Specie*.

THERE is nothing more concerning theſe, belongs properly to this Treatiſe, except as to the entring them in the *Leger*, which tho' it be contained in the preceeding Rule, yet 'tis fit to take along the following Inſtructions, *viz.* 1*mo*, When Bills are drawn or remitted by me, or to me, they may either be poſted in the *Journal* and *Leger*, according to the former Rule, upon the firſt giving and receiving them, or they may be entred only in a *Pocket-Book*, till they are preſented, if they are poſted before preſenting, then, in caſe of Non-Acceptance, beſides the Charges of Proteſtation, *&c.* the Contents muſt be re-charged, and what the Debtors and Creditors are in this Caſe will be plain, by conſidering for what the Bill was drawn, or remitted, and the Perſons with whom you have immediately to do, as to that Bill; ſo that I think it in vain to be particular upon every Suppoſition. If the Bills are only placed in a Pocket-Book till preſented, upon Acceptance (or Payment when the Bill is upon Sight) the Rule teaches what is to be done; but if they are refuſed and proteſted, then, you have only the Proteſtation to charge to his Accompt, who is liable: But if the Bills are to be ſent far off for Acceptance, I would not delay entring them; 'tis but a ſmall Trouble to re-change them: And beſides, it will not be convenient to leave a whole Tranſaction un-filled up, wherein theſe Bills may be concerned, ſuch as, if I had ſold Goods, and

received in Payment a foreign Bill, upon which I make the Accompt of Goods Creditor by the Person who is to pay the Bill to me, or by my Correspondent, to whom I have made it payable; but you'll find some Conveniency in the following Instruction. 2*do*, In case of Bills payable to you by Persons who have no Accompt in your Book, and whom you are like to have little Business with, to prevent giving every one of such an Accompt, make the general Title **Accompt of Bills** *payable to me*, — represent them all; let it be Debror for what they owe, and Creditor when it is paid. And for the Bills payable by you, to Persons that have no Accompt, *&c.* make **Accompt of Bills** *payable by me* — Creditor, and when you pay them it is Debtor: At every Article you must name the Person to, or by whom payable; and it will be well if you also number the Bills, *i. e.* upon the Debtor-Side of the Accompt payable to me, and the Creditor-Side of the other, for the first Bill that is entred, set before the Money-Column Number 1, than Number 2, *&c.* and these will all follow in good Order; then upon the opposite Side, when these Bills are paid, set the same Number to the Article, and here they will not follow in Order, because first Bill may not be first paid; therefore these Numbers will help you to compare the Debtor and Creditor Sides very readily, in order to know what are paid, what not.

2. You may, if you please, erect in your *Leger* the following Accompts, *viz.* **Accompt of sundry Persons** *to whom I owe*, make it Creditor for your Debt to them, and Debtor when you pay: Also, **Accompt of sundry Persons** *who owe me*, make it Debtor for all they owe, and Creditor when they pay: And you may number the Articles, as directed above. These Accompts may be useful to prevent Trouble, where the Debts are not very great, and the Persons have not an Accompt, nor like to have much Dealing with you: But if it happen they have some greater Dealing with you, before these Debts are cleared, so that you find it needful to give them an Accompt, then transport the Debt due to or by them on this general Accompt, into their particular Accompt, by making the general Accompt Debtor to, or Creditor by their particular Accompt for your Debt to them, or theirs to you.

3. It may be convenient sometimes to bring several *Species* of Goods into one Accompt, and then you must make an inner Column for every *Species*, with the Name of the *Species* upon the Head of that Column. For Example, I may have several Kinds of Wines, which may thus be brought into one general **Accompt of Wines**; or if there are many *Species*, I may sub-divide and keep **Red-Wines** and **White-Wines** in distinct Accompts, and the several *Species* of these, in distinct Columns. Suppose again, I have several Kinds of *Norwich* Manufactory-Wares, as *Seys Camlets, Crapes, &c.* these may be brought into one general Accompt of *Norwich-Wares*, with distinct Columns for each *Species*; or if there are too many *Species*, then I may sub-divide them into so many Assortements, and take 3 or 4 Kinds into each, and give them distinct Ac-Accompts, thus, *Norwich-Wares* of the 1st and 2d *&c.* **Assortement**, and let the Goods be marked with the Number of the Assortement to which they belong. Again, under the general **Accompt of Linnen Cloth** may be com-

prehended, Muſline, Cambrick, Holland, Linnen, *&c.* or ſub-divide theſe as you think convenient; perhaps each of theſe may require an Accompt, becauſe there are alſo *Species* of theſe, as plain and ſtripped Muſline, or where the *Species* are not ſo diſtinct, there may be a Difference as to courſe and fine; ſo the Accompt of Holland may have ſeveral Columns, marked Number 1ſt, 2d, *&c.* for this Uſe, *viz.* if you aſſign the ſame Number to all the Pieces of the ſame Fineneſs, or which are from ſuch a Price to ſuch a Price, then theſe are entred into the Columns that bear that Number. To have done, Things of very different Kinds may come into one Accompt, in ſuch a Caſe as this, ſuppoſe there come to me from any Place ſeveral different Goods, which are to be diſpoſed in whole Sale, as ſoon as poſſible; providing there be not an Accompt already open for ſuch Kind of Goods, I would enter them under this Title, *viz.* Accompt of Goods from ſuch a Place, and put any other Mark of Diſtinction you pleaſe. I ſhall ſay no more of this, ſuppoſing you will from what is ſaid, ſee the Uſe of ſuch Accompts, and eaſily contrive them according as different Circumſtances require.

4. If my Goods having been ſometime on Hand, do not hold out the full Weight, Meaſure, *&c.* entred on the Debtor-Side of their Accompt, I either buy more to make them up, and the Goods are Debtor for that, but the Quantity is not ſet down, (ſince it is only to make up the Inlack of what once was) or if I make them not up, then when the Accompt is finiſhed, *viz.* when all the Goods are diſpoſed, you may ſet down the Inlack in the Quantity Column on the Creditor-Side, to ſhew that the Accompt is ended; nor is there need to do this in Debtor and Creditor Form, for the Quantity now ſet down, does but ballance the like Quantity inlacked, which was on the Debtor-Side; and becauſe I don't ſet down any Value in the Money Column againſt that Quantity, therefore the Ballance of the Book will be no Way changed; but if you would be more formal, then may you charge the Value inlacked to the Accompt of Profit and Loſs, whoſe Uſe has been already ſhown, and ſhall be further explained immediately. Some Authors talk alſo of the Gain made upon the Weight and Meaſure of Goods; but I don't ſee upon ſtrict Examination, how this can fall out, if every Body has Juſtice done them: Indeed I may buy with one Weight, and ſell with another, and do no Injuſtice, For Example, Goods come to me from *Amſterdam*, marked with the *Dutch* Weight, which I ſell again by *Engliſh* Weight, (in other Caſes, I know not how it can fairly happen) but then the Weight to be entred on the Debtor-Side of the Goods, ought to be the *Engliſh*, which is equal by Reduction, to the *Dutch* Weight marked; So that if Goods are entred with the Weights and Meaſures wherewith they are given out, as in good Form they ought, this Gain can never happen honeſtly.

§ VI. *Of the* Accompt *of* Profit *and* Loss.

OF this Accompt I have already ſpoken, it's Uſe and Relation to the Accompt of Stock; it muſt contain on the Debtor-Side, all Articles of Loſs, and on the Creditor-Side, all Gains. But that you may better know how to uſe this Accompt, you muſt underſtand, that every Thing a Merchant gives out, or is obliged for, receiving no real Thing in Place thereof directly, nor Obligation upon any Perſon, is in this Method called Loſs; and what he receives and gives nothing for, is called Gain, tho' it may be there is neither Gain or Loſs in either Caſe, being made up another Way, which I ſhall make plain by ſome Examples.

I. Debts *paid with* Rebatement.

IF in Payment of a Debt to me, I rebate the Payer ſome Part for whatever Cauſe, he muſt be diſcharged, *i. e.* made Creditor, for the whole; what I receive is Debtor for its Value, and Profit *&c.* for the Rebatement: If the Rebatement is made to me, the Receiver is Debtor for the Whole, to diſcharge me, the Thing I give is Creditor for the Value, and Profit, *&c.* for the Rebatement. Now, if the Reaſon of theſe Rebatements be the Advancement of Money before it is due, 'tis plain there is no Gain or Loſs in effect, ſince it is made up by the Uſe of the Money.

IF the Debt was for Goods formerly bought or ſold, you may chuſe one of two Ways. *1mo*, Charge the Rebatement to the Accompt of Goods, by which ſo much will be taken off the Price formerly ſet on the Accompt; and ſo the true Gain or Loſs appear more exactly; eſpecially, if the Rebatement was for Deficiency in the Goods: But as to the Effect it has on the total State of Affairs, it will be the ſame Thing, and a more general Rule *2do*, To take it in all Caſes to the Accompt of Profit, *&c.* (ſince it comes here at laſt, for by charging it to the Goods, the Gain that would otherwiſe appear is ſo much diminiſhed, or the Loſs encreaſed) and in many Caſes ſuppoſable, there is no Reaſon for putting it on the Accompt of Goods, as if it were for advancing the Money before the agreed Term, the Uſe of which makes up the full Price formerly charged, and ought not to be diminiſhed on this Score; for with the Price ſet down, the Term of Payment is alſo told, and ſo it is not made greater than it truly is; But a certain Author ſays, it ought to be put to the Accompt of Goods, becauſe in this Caſe, *Goods that were formerly ſold on Time, become now as it were ſold for ready Money, and ſo much leſs.* And for the ſame Reaſon, I ſay, if it were not paid for ſome Time after the Term agreed, and Intereſt paid for the Forbearance, that Intereſt ſhould be put on the Accompt of Goods, becauſe, to imitate the former Reaſoning, Goods formerly ſold to be paid at a certain Time, become now

as

as it were ſold payable at a longer Time, and ſo much dearer; but there is no Reaſon for it in either Caſe; and it were juſt as reaſonable when Goods are ſold on Time, to ſet down no more than what the Sum to be received, is worth in ready Money, rebeating Intereſt for the Time, becauſe in effect there is no more received for them, what's more being the Intereſt of the Money; but ſuch Calculations were as idle as they are unpractiſed, and ſo I rather chuſe in all Caſes to carry ſuch Allowances immediately into the *Accompt* of *Profit*, &c. the State of ones Affairs is the ſame either way.

II. *Money borrowed or lent upon Intereſt.*

If I borrow Money upon Intereſt, I make *Caſh* Debtor to the *Lender* for the Principal, and *Profit* &c. *Debtor* for the Intereſt, till the Term of Payment. For 'tis juſt as reaſonable to give him *Credit* for this Intereſt before it is due, as when I buy Goods on Time, and give the Seller Credit; for the Term of Payment is narrated, whereby we underſtand the Perſon as *Debtor* at ſuch a Time. I have already obſerved, that in this Method there is a Conſideration had of the Quality, as well as the Quantity of a Debt, but that is only with reſpect to *Conditional* and *Abſolute*, (as above explained, and of which we ſhall have ſome *Examples* hereafter) to which Diſtinction doth not belong, a Debt's being payable on Demand, or at a fixed Time, and if it were propoſed to diſtinguiſh ſuch Debts, we muſt give every Perſon two *Accompts*, viz. *A. B.* his *Accompt on Time*, and *on Demand*. All Debts due by and to him on Demand, to be carried to the one, and what are contracted payable on Time, to the other; and then, when the Term of Payment comes, let them be carried from this Accompt, to the *Accompt on Demand*, *viz.* Make the *Accompt on Time* *Debtor* to, or *Creditor* by the other, for my Debts or his; thus, that Article will be ballanced or extinguiſhed in the *Accompt on Time*, and appear upon the other; but all this were needleſs Trouble, one Accompt may ſerve, the Narration being ſufficient, and for what I have ſaid, 'tis only to let you know what might be done.

If I lend Money, the Borrower is *Debtor* to *Caſh* for Principal, and to *Profit*, &c. for the Intereſt till the Term of Payment: But in either Caſe of borrowing or lending, there needs no Poſt be made for the Intereſt till 'tis paid, at leaſt till the Term of Payment come, and then carry it to *Profit* and *Loſs*, making the Borrower *Debtor*, and Lender *Creditor*, and upon Payment charge or diſcharge their Accompts; but if the Intereſt is paid before it is entred on theſe Perſons Accompts, then make *Profit*, &c. *Debtor* or *Creditor* to or by *Caſh*, or the Thing given: Therefore, when Intereſt is paid to, or by you, look well if it was formerly ſtated to the Perſon's *Accompt*, and uſe this Inſtruction accordingly. But if there is Money, or any Thing elſe given for the Loan, which is not to be deduced from Principal or Intereſt, ſet it be taken to the Accompt of *Profit*, &c. for it can never appear on the Man's Accompt; if it is only a Terms Intereſt advanced, ſtate it to Accompt as directed.

This

THIS *Intereſt* is plainly not any *real Loſs*, yet muſt be brought to this *Accompt*, there being no other it can be ſet upon, but the Uſe of the Money makes it up.

MONEY loſt out of one's Pocket, Stollen, loſt in a Wager, or other Adventure, of which we have no Expectation, Goods loſt at Sea, by Stealing or otherwiſe, are *real Loſſes*. To this *Accompt* belong alſo, the Allowances given to us as Factors, or by us to others as our Factors, tho' theſe laſt are ſometimes otherwiſe diſpoſed of, as we ſhall ſee when we come to foreign Accompts. There are alſo Gains and Loſſes by *Inſurance* and *Bottomry*, of which in their Places.

EVERY Article of *Houſhold* and *perſonal Expence* do belong to this *Accompt*, it being very properly *Debtor* for all ſuch, but of this more particularly afterwards.

FOR what Debts are loſt by *Bankrupts*, when they appear plainly irrecoverable, make *Profit*, &c. *Debtor* to the Bankrupt, that your Books be no longer troubled with his Accompt. But you may chuſe to make a general Accompt, *viz. Accompt of deſperate Debts*, which make *Debtor* to the Bankrupts, and this Accompt will always keep the Thing in mind, if it can ever be recovered, which if it be, this general Accompt is diſcharged and made *Creditor*.

N. B. IT is certain, that every Thing received may be made *Debtor* to the Thing given for it, and when that Thing is again put away, ſome other Thing or Perſon comes in its Place, or the Accompt of *Profit*, &c. But you muſt obſerve, there may be many Things purchaſed which are not deſigned for Sale, Profit or Encreaſe, for all theſe may Accompts be opened, yet it will be beſt not to keep any Accompt for ſuch Things as are meer Expences, and to be conſumed, ſuch as the Proviſions laid in for a Family, for theſe go altogether into the *Accompt of Profit*, &c. and whatever Things are purchaſed for the Uſe of another Thing, which has, ormay have an Accompt, ought properly to be charged to that Accompt. For *Example*, If I have a Quantity of Brandy in Butts, and would draw it off in ſmall Casks, which I buy for that uſe, it were idle to make an *Accompt* of ſmall Casks *Debtor* for their Value; the *Accompt of Wine* ought to be charged *Debtor*, and if any Thing is received for the Butts it was formerly in, that ought alſo to go to the Credit of *Accompt Wine*: But for ſome Things of this Nature, it may in ſome Caſes be more reaſonable to keep Accompts, that is, when the Things ſo purchaſed are of Value, and ſlowly conſumed; for then it may be a Satisfaction to know how much is diſpoſed of, and will be uſeful to prevent Frauds to have this Check upon Servants. This perhaps will not fall much in the Way of a Merchant, yet I explain the Rule here, that you may apply it when ſuch a Circumſtance occurs.

I hope, there is enough ſaid to ſhew the Uſe of this *Accompt* of *Profit* and *Loſs* for any Caſe. [See alſo *Chap.* III. where you'll find other particular Applications.] But I muſt now repeat a former Obſervation, *viz.* That when *Items* multiply upon an Accompt, it is very fit, if poſſible, to ſub-divide that Accompt into ſeveral Branches, by which we may gain a more diſtinct View of ſome particular Heads; and of this we have a notable *Example* in the *Accompt*

compt of *Profit* and *Loſs*, for the diſtinct Heads to which Gain and Loſs belong, are very many, and therefore each may have a ſeparate *Accompt*, and the Sums be tranſported in Totals or Ballances to the general *Accompt* of *Profit*, &c. as oft as we think fit. Accordingly we may have theſe particular Accompts, *viz. Intereſt-Accompt*, *Wagers-Accompt*, *Inſurance-Accompt*, *Accompt of Houſhold*, and of *perſonal Expences*, *Proviſion-Accompt*, (*viz.* for my Allowances as Factor for others) *&c.* to be uſed *Debtors* and *Creditors*, the ſame Way that the general Accompt of *Profit*, &c. would be in Caſes belonging to theſe Heads, concerning which there follow more particular Inſtructions; in the mean time conſider, that of theſe *Mediate-Accompts*, ſome may have both *Debt* and *Credit*; ſuch as *Intereſt-Accompt*, for a Man may both pay and receive Intereſt; others can only have Debt or Credit, ſuch as *Accompt of Houſe-Expences*, which has Debt but no Credit, except by the general *Accompt of Profit and Loſs* to carry it there, becauſe 'tis all Loſs or Spent: And *Proviſion-Accompt* which has *Credit* and no *Debt*, unleſs by *Profit*, &c. to carry it there, being only the Accompt of Gains made by Factorage: Now in framing ſuch *Mediate-Accompts*, you do well to take notice of this, for 'tis not right to incumber the *Leger* with many ſuch Accompts as are all Debt or all Credit, eſpecially where there may be frequent *Items*, but rather keep the Articles in ſmall *Memorandum-Books* expreſs, and bring the Totals when you pleaſe into the Accompt of *Profit*, &c. and for the correſpondent *Debtor* and *Creditor*, it will be either *Caſh* or *ſundry Perſons* who owe, or to whom you owe theſe Articles, which every Caſe will make plain of itſelf: [Of which ſee more in § XIII. below.]

Observe, When there happens any great Addition to your Eſtate by Gratuities, as Legacies, *&c.* ſuch Articles may be ſtated to the Credit of the *Stock-Accompt*, or *Profit* and *Loſs*, which I had rather, becauſe I would keep the *Stock-Accompt* clean of every Thing but what belonged to the laſt Inventary, for it is the proper Office of the *Accompt of Profit and Loſs* to receive all the Encreaſe and Decreaſe of the *Stock*, until we make a new Inventary, and conſequently a new *Accompt of Stock*.

§ VII. *Goods bought, but not preſently delivered.*

WE call theſe *Fore-hand* Bargains, where Goods are bought or ſold to be delivered at a certain Time, either with a Penalty or not; and Money or other Things given *per* Advance on the Bargain, as is moſt uſual in ſuch Caſes. Now, becauſe we ſuppoſe the Nature of theſe Bargains is ſuch, that there is an Obligation on either Party to fulfill, or at leaſt on the one, the other being willing for his Part, therefore not only muſt the Thing advanced be ſtated to Accompt, but 'tis fit the whole Tranſaction appear in the *Leger*, and that is done by Means of theſe artificial *Accompts*, *viz. Delivery-Accompts of Buying*, *and of Selling*, which repreſent the Goods till they are delivered, by being made *Debtor* or *Creditor* as the Accompt of Goods would have been, had they been now delivered: And then when the Delivery comes, it is

ſtated

ſtated to the *Accompt-Goods* themſelves, and the oppoſite Side of the *Delivery-Accompt*, whereby the Delivery is teſtified. But more particularly.

Caſe 1. When I buy Goods on the foreſaid Conditions, 1. I make *Delivery-Accompt of buying*, *Debtor* to the Seller for the whole Bargain, narrating upon his Accompt the Circumſtances briefly, and at the ſame time I make him *Debtor* to the Thing advanced: Thus he has a qualified Credit for the remaining Price, whereby both his Obligation and mine to fulfill the Bargain, are ſufficiently recorded, for the one involves the other. Then 2. When the Goods are delivered, I make their *Accompt Debtor* to *Delivery-Accompt*, &c. which clears that Accompt, teſtifying the Delivery, whereby the Seller's Credit becomes more abſolute; and when I pay him the Remainder, I make him *Debtor* for it in common Form. 3. If I receive more than the Bargain, that is a new Tranſaction, for which the Goods are *Debtor* to the Seller, or Thing paid for them, but if by Conſent I receive leſs in implement of the whole Bargain, I make the Goods *Debtor* for what is received, and the Seller *Debtor* for what he retains, becauſe he got Credit formerly for the whole, and I muſt now diſcharge myſelf of the retain'd Part; the *Delivry-Acompt* is *Creditor* for borh, being formerly *Debtor* for the whole. 4. If he fail to perform his Contract, he is *Debtor* to *Delivery-Accompt* (to clear that Accompt) for the whole Credit he had before upon this Bargain, and alſo to *Profit* and *Loſs* for the Penalty, or what Damages he can juſtly be obliged to pay, which will be none if the Bargain was revocable by him at pleaſure.

Caſe 2d In Caſe of Goods ſold by me to be delivered, I uſe *Delivery-Accompt of Selling*, and in like Caſes make the *Debtors* and *Creditors* exactly oppoſite, *i. e.* where the *Delivery-Accompt*, *Caſh*, the *Perſon*, *Profit* and *Loſs*, are *Debtors* in the former Caſe, they muſt now be *Creditors*, and contrarily

Note, Some take this Method, they erect ſuch *Accompts* as theſe, *viz.* *A. B. my Accompt of Tobacco* [For *Example*] *to be delivered to me*, and *A. B. his Accompt to be delivered to him*, theſe they uſe the ſame way as I do the general *Accompts* above explained, but this is needleſs Trouble, the two general Accompts are much more convenient, as we have hereby a compleat View at once of all our Dealing under theſe Heads, whereas to have particular Accompts diſſipates them, and each of theſe Accompts ſerve only one particular Bargain, but the general Accompts ſtand open as long as we pleaſe to receive every Tranſaction of the Kind: I ſhall therefore repeat their Uſes in few Words, *viz.* *Delivery-Accompts of buying* ſhews on the *Debtor* Side, what Goods of any Kind I have bought to be delivered at a fixed Time, and on the *Creditor* Side, ſhews whether the Bargain is fulfilled, and how far. The *Delivery-Accompt of ſelling* ſhews on the *Creditor* Side what Goods I have ſold to be delivered at a Time, and on the *Debtor*-Side ſhews whether the Bargain be implemented, and how far; whereby every Change and Poſture of Affairs is clearly recorded, as the End of *Book-keeping* requires.

But again *obſerve*, ſome propoſe to keep ſuch an Accompt for every Perſon with whom you have this Kind of dealing, as *A. B. his Accompt of Delivery*, which

which they make Debtor and Creditor until the Delivery, and then carry the Balance, if not paid upon Delivery, into their proper Accompt, (*i. e.* which bears their Name ſimply) this they pretend to make a Diſtinction of the Quality of the Debt, but 'tis altogether ſuperfluous, ſince the Narration ſufficiently qualifies it; beſides, this Method occaſions a ſeparate Accompt for every Perſon, and Accompts ought not to be multiplied without Neceſſity; and therefore, you'll find it inconvenient to make any ſuch Diſtinction, unleſs when you can bring them upon a general Accompt, which may repreſent ſundry Perſons in the ſame Circumſtances with reſpect to you; of which Kind you'll find deſcribed in the following Parts of this Treatiſe.

Note, If I buy or ſell Goods to be delivered, in *Barter* for other Goods to be delivered, at the ſame Time, the former *Inſtruction* will ſerve, and you may ſtate it to the Delivery Accompt of buying or ſelling as you pleaſe.

If I preſently deliver or receive Goods, which there is an Obligation to pay in other Goods at a fixed Time, this comes alſo under the former Directions.

If a Bargain of Delivery is to be fulfilled in few Days, a *Pocket-Book Memorandum* may ſerve for the Whole, till the Delivery, and then the Tranſaction will come under the general *Rules*. And indeed, if we pleaſe, eſpecially when there appears to be few Tranſactions of this Kind, or when the Bargain is revocable by both Parties at Pleaſure, we need do no more, than ſtate the Thing given and received in Advance, to the Giver and Receiver's Accompt; and upon Delivery, or Failure in Whole or Part, you'll eaſily find how to charge or diſcharge the Accompt of Goods, and the Perſon's Accompt, tho' the Delivery Accompts have a Conveniency, as I have already ſhown.

§ VIII. *Of Wagering.*

THE Tranſactions that occur under this Head are but few, there are in general, our Engagement in the Wager, and the Deciſion of it; alſo in the Engagement, we either conſign, or make a verbal Obligation upon Parole (as 'tis called.)

To record theſe Tranſactions, we may uſe theſe imaginary *Accompts*, *Wagers Accompt*, and *Hazard Accompt*, whoſe Uſes follow, *viz.* *Wagers Accompt* ſhows on the *Debtor Side*, my Engagement in the Wager, it is *Debtor* to what I conſign, or to *Hazard Accompt* if upon Parole, (becauſe there being mutual Obligations, I would have the Tranſactions recorded, [See *Chapter* I. § VII.] It ſhows on the *Creditor Side*, the Deciſion of the Wager, thus, *viz.* it is Creditor by what I receive, when I gain the Wager on which was Conſignation; or by Profit, *&c.* if I loſe it. When a Wager upon Parole is decided, either for or againſt me, I make *Wagers-Accompt* Creditor by *Hazard-Accompt*, which reverſes what was formerly done, and ſhews that the Wager is ended: But moreover, if I gain, I make *Wager-Accompt* Creditor, by what I receive,

or by the Person who owes; and if I lose, I make *Wagers-Accompt* Debtor for the Loss paid or owing.

Note, If I wager, and consign Goods for my Part, it is no Matter at what Value I state them, providing I restore them at the same Value; tho' it will do as well to state the Value agreed upon in the Wager, and if I gain, let them be charged back to their Accompt at the same Value; but if the Goods go not out of my Possession, till the Decision, I make *Hazard-Accompt* Creditor; for I don't think it proper to make their Accompt Creditor, since they are not delivered, upon Pretence that they are sequestrate for a Time, especially if I might, after this Engagement, sell all that I have of that Kind, and am obliged only to deliver so much, or the agreed Value, if the Wager goes against me, as appears reasonable.

When Goods are consigned, and rated in the Wager at a greater Value than they stand me in, some Authors direct to make them Creditor for that Value upon the Consignation, and upon the Decision in my Favours, to re-state them to their Accompt at the *prime Cost* only; but I don't find that this is exact Justice done to every *Accompt*, (tho' 'tis the same upon the Whole) because the Gain does properly belong to the Wagering, and not to the Goods; therefore, state and re-state them at the same Value.

If we suppose, what is not ordinary, That any Person consign in my own Hands, in a Wager against me, I make *Cash* Debtor to *Wagers-Accompt*; if I gain *Wager-Accompt* Debtor to *Profit*, &c. and if I lose, it is Debtor to what I give.

Observe, where there is little dealing this Way, and especially when Wagers are to be soon decided, you need only place them in a *Pocket-Book* till the Decision, (if even that be needful, as it is not in such Wagers as are immediately determined) and then what's gained or lost, let it be carried to the Accompt of *Profit* and *Loss*, or to *Wagers-Accompt*, as a particular Branch thereof; upon which you may see all your Gains and Losses that Way, separately and distinctly. Before I have done, let me mind what some direct, *viz.* that when the Wagers, upon which was Consignation, are determined against me, I need make no Post for it, since the Loss will appear at ballancing the *Wagers-Accompt* But I have an Objection against this; for, 1*mo*, These Authors conceive the *Wagers-Accompt* to be only a particular Branch of *Profit*, &c. but there is something more in the Use of this Accompt, for it is not strictly true at the Time of Consignation, that the Money is lost, and therefore the *Wager-Accompt* is rather to be conceived as a mediate Accompt betwixt *Cash* and *Profit*, &c. so that till the Decision come, these Articles on the Debtor Side are to be looked upon as belonging to our Estate, and ought accordingly to be carried to the *Accompt* of *Balances*, [See *Chap.* III.] at making up a new Inventary, in Order to show the true State of Affairs; otherwise if the *Accompt* is closed as an *Accompt of meer Profit*, &c. these Articles will not appear in the new *Books*; and it is as unreasonable, as if I should state a Cargo of Goods sent to Sea, to the *Accompt* of *Profit*, &c. assoon as shipped. 2*do*, If it is allowed that these Articles undetermined, belong to the *Accompt* of *Balances*, I ask how the Accompt shows, whether they are decided or not? If it do not show this, it comes so far behind of the true End of

a regular Accompt, which is to know every State and Posture of Affairs; and therefore you must either make some Mark against the Article on the Debtor Side, to show that it is lost, or rather make it Creditor by *Profit*, &c. when it is determined lost.

§ IX. *Of Conditional Promises.*

IF I promise any Person Money or Goods, or the like be done to me, upon certain Conditions to be performed, there is no real Debt till Performance; yet we must consider, whether the Promiser is under positive Obligation to the other upon his performing; if he is not, (or when the Promise is altogether gratuitous, revocable at Pleasure) there is no Reason to make any *Leger* Post of this; but when the Condition is performed, let the Thing promised, and now given or received, be stated to the *Accompt* of *Profit*, &c. for *observe*, it is not supposed, that any real Thing which can be again disposed of, is to accrue to the Promiser by the Performance, which would bring it under the Notion rather of *Delivery-Accompt*, especially if there be a positive Obligation on the *Promiser*; but we suppose here no such real Thing to be expected by the Performance, yet may the Promiser be obliged to the other, because of Trouble and Expences he has been put to in accomplishing the Conditions; in this Case there may be a better Reason alledged why there ought to be a *Leger* Post made, because of the Obligation on the one Party; tho' a *Pocket-Book Memorandum* may serve till Performance, especially when that is expected to be soon, or not at all: But if in Prosecution of the Method of *Book-keeping*, it be required to state these conditional Obligations, it can be done under the imaginary Accompts, *Promise* and *Conditional Accompts*; thus, *Promise-Accompt* is Debtor to *Conditional-Accompt*, for my Promises, and Creditor by *Conditional-Accompt* when the Performance is made, and Promise fulfilled; it is also Creditor by *Conditional-Accompt*, for Promises made to me, and Debtor to *Conditional-Accompt*, upon Performance and Promise fulfilled, or Advice as aforesaid. Thus will you always find by these *Accompts*, the true State of such Parts of your Affairs, *i. e.* what Promises you have made, or others to you, and what of them remain still in Force, or are extinguished by actual Performance, or otherwise; and mind that the Things given out, or received, go to *Profit* and *Loss*.

Note, Some would have fore-hand Bargains come under the Directions for *Promise-Accompts*; but what's already delivered upon this Head, is much preferable.

§ X. *Concerning Accompt of Houses and Ships.*

1. FOR *Houses*, if they are not very many, you may bring them all into one *general Accompt* of *Houses*, or sub-divide them under any Denomination you please, or give every *House* a separate *Accompt*, make it *Debtor* for the Value, and for all cost of Reparation, and publick Burden due out of it, and *Creditor* for the Rents due by the Tenants, or paid *per* Advance

vance, [See *Chapter* III.] or when you dispone the House, it is *Creditor* for the Value.

Note, You may also make a general Accompt for all the Possessors, such as *Accompt of House-Rents*.

It is easy to apply this to *Accompt of Farms*, or any Tillage or Pasture-Ground belonging to you; but I say no more of it here.

2. For *Ships*, if you give every Ship which belongs in Whole or Part to you an *Accompt*, it is *Debtor* for the Value, and *Creditor* when you sell it; but then for stating the Charges and Profits arising from it, it will be best to consider these in two *Cases*. 1. If you trade none in her, but let her out for Freight, then make the Ships Accompt, *Debtor* for all Cost and Charges, and *Creditor* for the Freights received or owing, the Difference of which is your neat Gain or Loss, [See *Chapter* III.] But, 2. If you trade in her, you may either take the same Method, and charge the Freight upon your own Goods, as you would take from others, to keep the Accompt of your Merchandize and its Product, distinct from that of your Ship, or make the *Accompt* of the *Voyage*, [See the next, § XI.] *Debtor* for all Charges about the Ship, and *Creditor* also for the Freights received, or owing for Goods belonging to Strangers. But the first Way is best.

§ XI. *Of Insurance and Bottomry-Accompts.*

1. Insurance is a Transaction, wherein one Person obliges himself to another, for Security of any Thing that's in a possible Hazard, and this is done for a Reward of so much *per Cent.* of the Value insured; which is free Gain to the Insurer, if the Thing is safe in the Terms of the Contract; otherwise he is liable to the Owner for the Value.

Case 1. If the *Insurance* is made to me, the *Præmium* paid or owing, is Part of the Charges on the Thing insured, which therefore is made *Debtor* for the same: But if it is on a Cargo at Sea, the *Voyage* is *Debtor*, [See § XII. below] if the Thing insured is lost, the *Insurer*, or Thing received from him, is *Debtor* to the Accompt that was formerly *Debtor* for the *Præmium*.

Case 2. If I insure Goods to another, the *Præmium* received or owing, and the Value repaid, in Case the Subject insured is lost, are Articles which belong immediately to *Profit*, &c. but if you would know your Gains and Losses of this Kind more distinctly, then erect an *Insurance-Accompt*, make it *Creditor* for the *Præmia* received or owing for other Mens Goods insured by you, and *Debtor* for what you repay or owe, in Case the Thing is lost.

Note, In case Goods insured are lost, 'tis reasonable and ordinary, to dispone the Subject to the Insurer, when the Circumstance is such as it may be possible to recover any Thing of it; as when Goods at Sea are taken by the Enemy. In this Case all that the Insurer expends, is placed to the Debt of *Insurance-Accompt*, and what he recovers to the *Credit* thereof.

Observe,

Observe, Some Authors instruct to use this *Insurance-Accompt*, both when I insure other Mens Effects, and others mine; they make it represent the Person to whom I owe for the *Præmium* of my Goods insured, and *Creditor* also for the *Præmium* received for other Mens Goods insured by me, but this is all a Confusion, and answers not the Design: For these Men, if you would not give them an Accompt, you may use such a general Accompt, as described in § V. *Note* 2.

2. Bottomry is a Transaction, wherein a Man lends Money upon the Bottom of a Ship bound to a certain Place, on Condition, that if she arrive according to the Terms of the Contract, the Money with the agreed Interest is to be paid to me, or to my Factor where the Ship arrives; but the Ship being Lost in that Voyage, I lose my Money.

Case 1. When I am the Lender, the Thing that would occur first to ones Mind here is, to make the Bortower *Debtor* to *Cash* for Principal, and to *Profit* &c. for the Interest; but the Debt being conditional, some erect *Accompts* for the Ship, thus, *Ship — at her arrival in —* (which qualifies the Debt perfectly well) and make this *Debtor* for Principal and Interest; also because they would know their Gain and Losses by *Bottomry* separately, they make a particular Accompt of *Profit* &c. by *Bottomry*, and Title it thus, *Bottomry-Accompt*, which is *Creditor* for the Interest owing me, and *Debtor* for what I owe. But this obliges to have a separate *Accompt* for every Ship, which, if your Dealing that way is great, will be inconvenient, and it were better to have a general Accompt to represent them all, upon which you may see all your Dealings that way at once. It may be said, that the fore-mentioned *Bottomry-Accompt* will shew it, but that shews only the Interest; and besides, does not remove the Inconveniency of separate Accompts for every Ship: *Therefore* I'd like it better if you erect a general Accompt, and call it *Accompt of Borrowers upon Bottomry*, and make this *Debtor* for the Principal and Interest lent, and use either the general Accompt of *Profit* &c. or the former particular Accompt for the Interest. Or you may, as some do, make the Title *Bottomry-Accompt* personate the Borrowers; and for the Interest, if you'd have a particular Accompt of *Profit*, &c. call it *Profit* or *Loss by Bottomry*, which is sufficiently distinct from the other Accompt.

When the Ship arrives, and the Money is paid, or when she is Lost, the Accompt that you made *Debtor* is to be now discharged and made *Creditor*, the correspondent Debtor is obvious.

Case 2. If I am the Borrower, *Cash* and *Profit*, &c. (either a particular or the general Accompt which you used in the first Case) is *Debtor* for Principal and Interest; and for the Lenders, either give them a particular Accompt, or rather a general one, such as *Accompt of Lenders upon Bottomry*, and upon Payment or Loss of the Ship this *Accompt* is charged *Debtor*, the correspondent *Creditor* will be obvious.

§ XII.

§ XII. *Proper Foreign-Accompts.*

ALL the Transactions that occur upon this Branch may be comprehend under these general Heads, *viz.* the shipping of my Goods: The Advices concerning the Voyage, as whither they are Lost, or come safe to my Factor's Hands: My Factor's Advices concerning the disposal of the same: My Orders to him about the disposal thereof, or for buying up Goods for my Accompt: And the mutual Draughts and Remittances betwixt us for my *Accompt.* These and what else may occur in the Way of foreign Trade, by settled Correspondence, you'll have very distinctly recorded under the following Titles of Accompts.

Voyage to ~~to~~ *in the Ship* — *A. B. Commander.* This *Accompt* must contain, or shew on the *Debtor*-Side, i. e. be made *Debtor* for what Goods I ship away, for my proper *Accompt*, both the Value as they stand me in to this Time, and all Charges of the Voyage, Insurance, [See § XII below] Ransom and Salvage. On the *Creditor*-Side it must shew the Event of the Voyage; for while there is nothing on the *Creditor*-Side, I look upon them as still at Sea, at least not come to their Port: But upon Advice that they are Lost, or come to my Factor's Hands, the Voyage is made *Creditor* by *Profit* &c. the *Insurers*, or *my Factor's Accompt*, as below.

Note 1. Every distinct Cargo and Voyage should have a distinct Space, with a Quantity Column to each Species shipped. Mind also whether the Goods shipped were formerly entred in the *Leger*; if not, then the Thing given for them, or the Person to whom you owe is *Creditor*. And when you buy Goods in order to be sent Abroad, especially if they are to be shipped soon after, you need not enter them in the *Leger* (only in a Pocket-Book) till they are shipped, and then the Voyage is charged for them.

2. If part of the Goods are Lost, it is the same thing to charge *Profit* &c. for that Part, or lay the whole Charge on the Part saved.

With your Factor keep these distinct Accompts, viz.

1. *A. B. Factor at* —— my Accompt of Goods per *Ship.* (*viz.* which were consigned to him to Sell for my *Accompt*) shews on the *Debtor*-Side, or is made *Debtor* for my Goods, which he advises me are come to his Hand, but not disposed of: On the *Creditor* Side it must shew how he has disposed thereof, according to Advice.

Note, You may Title the Accompt thus, *viz. Accompt of Merchandize* per *Ship* — *in the Hands of* A. B. *Factor at* —, and make a Column for every Species to put the Quantity in, and if there is but one Species, then Name it as *Accompt of Tobacco*, &c. By naming the Ship, you see plainly I intend a different Accompt for every Cargo consigned, that things may be as distinct as possible.

poſſible: And here you have the Difference betwixt an Accompt of Goods in your Factor's Hands, whoſe Name is added, and an Accompt of Goods in your own Cuſtody, that bears their Name ſimply as *Accompt of Wine.*

2. A. B. *Factor at* —— my Accompt of Sales on Time, (or of *outſtanding Debts,*) it is *Debtor* for what Sales he adviſes me he has made of my Goods on Time, and *Creditor* for what he adviſes me are paid thereof.

Note, The Uſes of the preceeding Accompts are ſhort and determinate, and being well minded, will make eaſy Work, for every other Tranſaction that concerns my Affairs with *A. B.* as my Factor goes to the next Accompt.

3. *A. B. Factor at* — my Accompt current, ſhews on the *Debtor-Side* what Money my Factor has received for my Account, any Manner of Way; as for my Goods, or by Bills of his Draught on me, or my other Correſpondents by Order and for my Accompt, or remitted by me to him, or his Correſpondents: It ſhews on the *Creditor-Side* what I receive from him, in Payment or Return of the Debts on the other Side, and what I any other Way owe him as my Factor, either by his Bills remitted to me, or my Correſpondentts by Order, or drawn for my Accompt on him, or his Correſpondents; and for the Goods which I commiſſion him to buy to be ſent to me, or elſewhere for my Accompt, [See *Note* 2d below.]

Note 1. It is plain, theſe *Accompts* come all in one anothers ſtead *i.e.* are *Debtors* and *Creditors* one to another, as the State and Circumſtances change: And to know which is *Debtor* and which is *Creditor* in any Caſe, you need but compare their Uſes. So many Accompts with my Factor are very uſeful and convenient to ſhew diſtinctly the different Poſture and State of Affairs; (and therefore I am not pleaſed with ſome Authors who never diſcharge the Voyage till my Factor adviſes that the Goods are diſpoſed of) but the *Accompt current* is the moſt general Accompt, and called *Current*, with reſpect to the other Two, whoſe Uſe is more limitted, and may be cloſed or finiſhed, while the other is ſtill open, which alſo is a Recipient for the firſt Two, as you ſee by comparing their Uſes, unleſs what is due from them, be immediately remitted; for which ſee the next *Note*. *A. B.* may act as my Factor in negotiating Bills of Exchange, tho' I never conſign any Goods to him, and then this is the Title of Accompt to be uſed.

2. Be very careful to mind when your Factor makes any Remittances, either in Money or Goods in return for what was in his Hands; the Accompt that ſtood laſt *Debtor* for that, muſt now be made *Creditor*; as when with the firſt Advice of the Receipt, there is alſo an Advice of the Sale, and a Remittance of the Value, then is the Voyage Creditor; or when the Goods were ſome Time on Hand, your Factor adviſes of the Sale, and at the ſame Time remits the Value, my Accompt of Goods is Creditor; or when he adviſes of a Debt received, and remits the ſame, my Accompt of Sales is Creditor; or if my Accompt current was already charged with it, make it now Creditor.

3. My Accompt of Sales, may be ſaid to repreſent the Perſons that buy my Goods from my Factor; but theſe Perſons knowing nothing about me, and my Factor being accomptable as having the Direction; therefore this Accompt bears

bears his Name, and represents him in a particular Circumstance, *viz.* as accomptable for these Debts, when he receives Payment thereof; for this Accompt supposes what is the most ordinary Way, *viz.* that my Factor is liable to me for the Buyers, no further than it can be proven he sold my Goods to reputed Bankrupts, or neglected the necessary Diligence for recovering the Debts. But there is another Supposition to be made, that my Factor for a greater Allowance, obliges himself to make good all the Sales he shall make of my Goods, and then the **Accompt of Sales** is needless, and the **Accompt current** to be charged for all the Sales; and because even then we may suppose the Factor not bound for Payment of these Sales, till the Term of Payment come at which they are payable by the Buyers; therefore, let that Term be narrated in the Article, according to the Advice. And if this Contract for insuring your Debts is entred into, after the **Accompt of Sales** is opened, and some Articles standing upon it, I would immediately ballance it, *viz.* make it Creditor by **Profit, &c.** or **my Accompt of Goods** for the additional Provision allowed for the Insurance, and by **my Accompt current** for the neat Ballance of the Debts, when this is deduced.

And indeed you may save this **Accompt of Sales**, and use **Accompt current** in its Stead upon any Supposition, because the Narration will sufficiently qualify the Article; or when the Debts are not insured, you may let the Sum stand not extended into the Money Columns, until your Factor advise you that he has received Payment; or, if you extend it at first, then when he advises you that he has received Payment, make a Mark on the Article to signify this, and when he remits the Money, discharge the Accompt.

4. **My Accompt current** must have an inner Column, for the foreign Coin of the Place where my Factor lives, because it is by the Number of these he clears Accompts with me; so that having given out as many (*Guilders*, for Example, in *Holland*,) as he received for my Account, he is nothing in my Debt, nor I in his, and the Difference of the *English* Money Columns. is gain'd or lost upon the Exchange. **My Accompt of Sales** when kept, should have an inner Column also, for the same Use.

5. My Factor in advising me of the Sales of my Goods, may either send his Accompt of the neat Proceeds, (*i. e.* deducing his Charge and Provision) or he sends the total Amount of each Sale, and when all are sold, he gives in his Accompt of Expences and Provision, in which Case I make **Profit, &c.** or **my Accompt of Goods** Debtor to **my Accompt current** for these Charges, and also for what Rebatement he makes to the Buyers for Defect in the Goods, or by my Order for whatever Cause.

6. If my Factor advance Money for me, he'll be sure to charge me with the Interest, and so I must charge **Profit, &c.** to **my Accompt current** for the same. Some talk of an Accompt on Time different from the foresaid **Accompt of Sales**, upon which they enter all Bills drawn at long Usance, in order to know how much your Factor is in advance for you, and when the Time of Payment comes, they carry it into the *Accompt current*: But this is needless, the Narrative of the Article upon this Accompt being sufficient.

7. If

7. If my Factor draw Bills on me, or remitt to me payable in another Place as at *London*, to ſave giving every Perſon an Accompt with whom I have already no Correſpondence, you may uſe theſe general Accompts, **London Exchange of Draughts**, to perſonate them to whom I owe Bills, and **London Exchange of Remittances**, for theſe who owe me: And in Caſe of Proteſtation of Bills between my Factor and me, the Charges and Exchange, *&c.* goes to my **Accompt current** Debtor for what he is liable in, and Creditor for what I am liable in; the correſpondent Creditor and Debtor will appear eaſily in every Caſe, according to the Circumſtance.

8. *N. B.* If I ſend Goods to Sea, committed to the Management of a Super-Cargo who diſpoſes of them, and loads a Cargo in Return, or brings the Value by Bills of Exchange, the *Voyage* will ſtand undiſcharged, till your Super-Cargo adviſe that they are ſold, and then the Voyage home-wards is Debtor to the Voyage out-wards, for the Value of the Returns, or the Perſons on whom the Bills for the Value are drawn; but if your Super-Cargo is obliged to leave all or Part of them in the Hands of a Factor, then muſt that Factor my **Accompt of Goods** be made Debtor to the Voyage out-wards.

Obſerve, Proper foreign Accompts and Factorage involve one the other, as being exactly reverſe to each other, and ſo I might have inſtructed you in them both together; but I think I have choſen better to keep them diſtinct, it breeds leſs Confuſion, and you'll ſee the Difference more diſtinctly that is betwixt them, by comparing the Inſtructions under both Heads ſeparately.

§ III. Before I go further, I have ſome Things to explain concerning the Books of Accompts, which will not be proper to delay any longer.

I hope it is already evident, that the *Leger* is the Principal Book of *Accompts*, becauſe here the diſtinct State of every Thing appears: The *Waſte-Book* and *Journal* are next Principal, but the *Waſte-Book* eſpecially, for it contains all the Materials laid together in the moſt ſimple Manner, out of which that more pure and artificial State of *Accompts* is framed, and is a Book not to be diſpenced with: The *Journal* has in it more of the Nature of a Subſervient-Book. But beſides theſe Three principal Books, there are *Others* uſed by Merchants contrived arbitrarily, according to the Nature of their Affairs, or their Fancy, deſigned either as Subſervient to the *Grand-Books*, or to ſome particular View of their own. Of theſe I ſhall now diſcribe ſome, and leave others to the remaining Parts of theſe Inſtructions, where they may come in more naturally, and yet there may be ſuch as I don't Name, becauſe every one will chuſe for himſelf: It will be enough that I ſpeak of the moſt common and uſeful, by which you'll underſtand the Nature and Deſign of ſuch Books, and then contrive as Conveniency or Fancy ſhall direct you.

Some of theſe Books are deſigned for abridging the Records of the *Grand-Books*, by keeping the Particulars of ſome long and tedious *Accompts* in Books apart, and transferring the Sums once a Week, Month, *&c.* as you think fit, into the principal Books, referring to theſe other Books for inſtructing the Particulars of this Kind is, the

Cash-Book.

WHICH is numbred in *Folios* like the *Leger*; upon the left Side is written down all the Money received, with the Circumstances, and on t'other Side all given; either in a narrative Stile, or in Form of Debt or Credit, as you please; and then the Sums of these Pages are carried in Totals to the *Cash-Accompt* in the *Leger*, which is made *Debtor* to *sundry Accompts*, as *per Cash-Book*, and contrarily *Creditor*, for the Sums of the Money received and given out once a-Week, *&c.* and for the correspondent *Creditors* and *Debtors*, the Sum was stated to their *Accompt* already; for this *Cash-Book* does not prevent the *Waste-Book* and *Journal-Records* of every Transaction, to which that *Cash* belongs; and so 'tis stated to every other Accompt that is concerned in the Transaction for their respective Parts, and only abbreviates the *Cash-Accompt* in the *Leger*. Some propose to mention the Species of the Money given and received, and then to make all distinct, you ought to have an Inner-Column for every Species you can have occasion to give and receive, that you may know not only the Value of the Ballance in the Standart *Arithmetical Denominations*, as *lib. sh. d.* but the several Coins of which it consists; and if this be of Use to any kind of Traders, such as Bankers, let them use it.

Book of houshold and personal Expences.

I have already said, that if the Nature of any Accompt is such, that it either gives all, or receives all, *i. e.* is all Debt or all Credit, then it is convenient to keep a Book express for these Articles, and bring them in, in Totals, to their Accompt in the *Leger*; and such is the Accompt of houshold and personal Expences, which is all Debt, and can only be Creditor by Profit and Loss, for the total Debt which is so much spent; and tho' you use only the general Accompt of Profit, *&c.* yet this separate Book will be convenient, whereby you may know all these Expences without Confusion: For I suppose you see by this Time a plain Necessity, that, in order to a regular State of Affairs, the Merchant, (or others who keep Accompts in this Manner) make an exact Record of every Thing given and received for whatever Cause; therefore in a separate Book, let every Article of houshold and personal Expences be duly written down as they occur, and the Book continued from one Page to another, and the Sum of the preceeding Page carried to the Beginning of the next Page: There will indeed be many small Deboursements not worth bringing here one by one, but a Sum of Money being given for defraying several Expences of a Family, let the Master take his own Way to be satisfied how it was laid out, it is enough he write in his Book that so much Money is given out, and other grosser Articles will come in particularly; the Sum of these Articles must be brought in to the *Leger* as oft as you please, either upon the Accompt of Profit, *&c.* or Accompt of houshold and personal Expences,

pences, which make *Debtor* to *Cash* for the Sum. If any Articles are owing, I would have inner Columns into which ſet theſe Sums till they were paid, and then draw them out; and in caſe that Page in which they are ſet be tranſported into the next Page before they are paid, let the Columns of Money paid, and owing, be ſumm'd up and tranſported ſeverally into their proper Columns of the next Page; but when you tranſport the Page into the *Leger*, then, only carry the Sums paid, to *Caſh*; and for theſe that are owing, you may chuſe one of two, *viz.* tranſport their Sum into the next Page in the proper Columns as before, and when they are paid draw it out there, (and it will be convenient upon this Payment, to look back where the Article was firſt entred owing, and mark it with a *P.* to let you know more readily it is paid, tho' this you would know at the Place where it is tranſported and drawn out); but then if ſeveral ſuch Articles are tranſported in one Sum, unleſs they be paid at once there will be a Confuſion; and therefore rather let them ſtand where they are firſt, and when they are paid mark them with a *P.* which will be ſufficient, and having ſumm'd them up carry the Sum into the outter Columns, (whoſe Sum is always the total Expences already laid out) and ſet it down in Order after the laſt Article of the Book, or every Article as it is paid may be thus ſet down a-new: Or when you tranſport into the *Leger*, you may erect ſuch an Accompt, as **Accompt for houſhold &c. Expences out-ſtanding**, and make the general **Accompt of houſhold &c. Expences** Debtor to this for the Sum, and then as they are paid make this Accompt *Debtor* to *Caſh*. See more of its Uſe in *Chap.* III. but if you owe any very conſiderable Article, ſuch as Houſe-Rent, *&c.* to Perſons who have other Dealings with you, and an Accompt already in your Book, make *Accompt of houſhold* &c. *Expences — Debtor* to their Accompt for the ſame, and don't write it into this Book; or if you do, and uſe the laſt Method, take Care at the Tranſportation to paſs ſuch Articles, becauſe they are already ſtated in Form, and all the Uſe of ſetting them in this Book, is that we may know upon it the Total Expences; but this the *Accompt of Expences* in the *Leger* does exactly ſhow after the *Tranſportation:* But if you would keep this Book more ſimple, then keep a ſeparate *Memorandum-Book* for Articles owing, and when paid mark them ſo in the *Memorandum*, and carry them particularly or in Sums into the former general *Book of Expences.*

Book of Charges of Merchandize.

Under this Denomination of Charges of Merchandize, I comprehend every Thing given out or owing, except the Coſt of the firſt purchaſe; it is already ſaid, that every *Accompt of Goods* ought to be made Debtor for all Charges and Expences thereupon, and if the Articles are great, and ſuch ſometimes will be the Duties paid or owing to the Publick, it is beſt that theſe be immediately charged to their particular Accompts; and for Debts of this Kind owing, unleſs the *Creditor* have already an Accompt, erect an *Accompt*

of outstanding Charges, which will conveniently represent all such *Creditors*. But besides these, there will be many Articles that cannot properly be laid on any one Kind of Merchandize, (when you trade in many) such are Servants Wages, Ware-house Rents, *&c.* an Accompt of these must therefore be kept distinct: Also there will be several petty Charges, which tho' we know to what Accompt they belong, yet would it be inconvenient to place every such Article separately to the *Accompt* in the *Leger*; therefore is it necessary to have a separate *Book of Charges*, &c. in which write down all these Articles as they fall out in a plain Narration. The Nature of this *Book* is the same with the preceeding *Book* of *Houshold Expences*, and therefore apply the Directions given there, to this *Book* and its Transportation into the *Leger*; and to make it Parallel, you have already described *an Accompt of out-standing Charges*, and for such as are paid, make a *General Accompt of Charges of Merchandize*, or the general *Accompt of Profit*, &c. but for such Articles as belong to particular Accompts, you may chuse at the Transportation to collect them separately, and carry the Total of what belongs to each, into its particular *Accompt* in the *Leger*: Or you may divide the *Page* of this Book, and on every Division write the Name of some particular Merchandize, which has a distinct *Accompt* in the *Leger*, and set down in that Space all the Articles belonging to it, and then the Transportation will be more easie; and for other more general Articles, they must go all together in a distinct Part of the Book, and be transported to the *general Accompt of Charges of Merchandize*.

Note, THESE *Articles of Houshold*, &c. Expences and Charges of Merchandize, which are placed in these *Books*, are not to be put in the *Waste-Book*, till we make a Transportation into all of the grand Books, and then we narrate in the *Waste-Book* at once, that such a Sum is paid or owing of *Houshold*, &c. *Expences*, or for *Charges of Merchandize*, as *per* the particular *Books* containing the Articles thereof: Then make the *Journal* and *Leger* Record as directed.

Month-Book.

THERE are other of these subservient Books, which do not at all abridge or alter the Records of the principal Books; they serve only some particular View of the Owners, such is a Month-Book, which is numbred in *Folios* like the *Leger*, and divided into Spaces, which bear the Names of the 12 Months, *January*, *February*, &c. or if you find it necessary, give to every Month a *Folio* or more; upon the left Side, write down all the Articles that are payable to you in that Month; in a small Column next the Margin on the Left, set the Day of that Month when the Debt is payable; and against it, within the Space, name the Debtor and the Date of the Transaction in the *Waste-Book*; then draw out the Sum in the Money Column; upon the right *Page* write down, in the same Manner, the Sums payable by you that Month; and when these Debts are paid, mark them so upon the Margin, or make double Money Columns; in the inner-

innermoſt ſet the Article when contracted, and when paid draw it into the outtermoſt.

THIS *Book* is very uſeful for one who receives and pays many Sums, it being convenient, that he ſhould know before hand, what he is to expect or pay every Month. *Note*, you may make 12 Spaces for every diſtinct Year, or make them ſerve for ſeverals, by ſetting the Year before the Day of the Payment, upon the Margin.

N. B. IN Caſe of partial Payments, it is very fit to have a *Memorandum-Book* for them, and then in the *Month-Book*, when a partial Payment is made, let it be known by ſome particular Mark, that there is a Part paid, tho' you ſay not how much; and when the Whole is paid, then draw it out; and upon the Man's Accompt in the *Leger*, write down every Article as it is paid, unleſs when the compleat Payment is very ſoon expected, for then it may ſtand till the Debt is cleared.

Copy-Book of Letters.

A Merchant ought to keep a *Copy* of all the *Letters* he writes or receives from his Correſpondents, and the *Book* he puts them in, is called the *Copy-Book of Letters*: He may alſo chuſe to keep them ſeparately, the Letters he writes in one Place, and what he receives in another, which laſt he may again diſtinguiſh, and keep theſe he receives from his foreign Employers, when he ſerves as Factor, by themſelves, becauſe theſe generally contain the Commiſſions given him by his Employer; this, and any other Book that relates not to the State of the Accompts, I ſpeak no more of.

Invoyce-Book.

THIS *Book* contains an Accompt of all Goods which we ſhip away, whether for our own, or other Mens Accompt, with the whole Charges till on board; the Form is very ſimple, every Cargo is ſet down, one after another, and the Article beginning with the Date, proceeds thus, *viz.* ſhipped, (or *Invoyce of Goods* ſhipped) aboard the Ship——*A. B.* Maſter conſigned to *C. D.* to ſell my Accompt; or, if for another's Accompt, ſay, By Order, and for the Accompt of——*viz.* &c. after this follows a particular Ennumeration of the Goods, their Quantities and Prices, and all the Charges. Now this *Book* is but a Copy of the ſame Tranſactions recorded in the *Waſte-Book*, or if you don't place them there, this *Book* is a Part of the *Waſte-Book*, and deſigned for the greater Conveniency, which ſome think it affords to have all theſe Tranſactions of a particular Nature ſtanding by themſelves; but I ſee no great Neceſſity for this, ſince ſo conſiderable Tranſactions ought not to be out of the grand *Waſte-Book*; and for the finding out theſe *Invoyces* and *Loadnings*, it can be very readily done by the *Leger*, which upon the *Accompt of Voyage* for your proper Accompt, or upon

upon your Employer's Accompt current, will either ſhow the Particulars, or ſend you for them to the grand *Waſte-Book* and *Journal*, by the Date of the Tranſaction. Therefore, when Goods are to be ſhipped, let a particular Accompt of them, with all Charges, be kept in a ſeparate *Memorandum*, until they are put aboard, and then let the Tranſaction of the *Waſte-Book* be an exact Copy of the *Invoyce* or *Bill of Loadning* ſent to your Correſpondent, with all the Charges paid and owing, till they are aboard.

Some who uſe theſe *Invoyce-Books*, leave an equal Space on the oppoſite *Page* againſt the *Invoyce of Goods* ſhipt to a Factor for your Accompt, in which they ſet down the Contents of every Advice received from your Factor, concerning theſe Goods, whereby they may more readily know how Things ſtand for that Particular; but your Factor's Accompts in the *Leger* are ſufficient for this.

Note, The Deſcription of this *Book* puts me in Mind to tell you what ſome Authors have obſerved concerning the keeping a *Waſte-Book*, *viz.* That it may either be one continued univerſal Record of whatever occurs in a Merchant's Buſineſs; or, becauſe Tranſactions of that ſame Nature, will ly ſcattered in it as their Dates are, and even in the *Leger* they will be ſcattered upon the ſeveral Accompts to which they belong; therefore, that we may have all of one diſtinct Kind together, they propoſe to keep ſeparate *Waſte-Books* for ſeveral Uſes, for *Example*, in one your *Inventary*, and all your Accompts of buying, and other Purchaſes are; in another, all Accompt of Sales; in another, all *Invoyces* as above; 4th to contain all Payments of Debts made to or by me *&c.* thus they parcel out the whole Tranſactions of the grand *Waſte-Book* into ſo many particular *Books*. Do in this as you think fit.

There is another Thing of better Uſe I have to let you know, as to the keeping a *Journal-Book*; which is, That becauſe Things may be written in the *Waſte-Book* by ſeveral Hands, and often times in haſte, ſo that this firſt Copy will probably be more rude than might be wiſhed, therefore I know ſome who practiſe this Method, *viz.* Out of that firſt *Waſte-Book* they compoſe another, differing only in this, That Things are better expreſſed, and the Circumſtance more clear: In this Book, none but one Perſon writes, it is upon larger Paper, and upon the left Side of the Page there is a great Space from Top to Bottom, ſeparate by a Line, to the Right whereof the Tranſaction is narrated, as aforeſaid, and in that Space upon the Left, the ſeveral *Debtors* and *Creditors* are diſtinctly written, without any Narration; the Names of the *Debtors* are firſt ſet down, and then of the *Creditors*, and after each the Sum for which they are *Debtors* and *Creditors*, and with each may be written the *Leger-Folio*, where they ſtand.

Note, In Imitation of this, I have in the following *Waſte-Book*, No. II. after the Narration, ſet down the Names of the *Debtors* and *Creditors*, and the Sum belonging to each, alſo the *Leger-Folios* where they ſtand, inſtead of making a *Journal*.

§ XIV.

§ XIV. *Factors Accompts.*

WHEN I serve another in Commission as Factor, the Transactions will be comprehended under these general Heads, *viz.* my receiving Effects of his to dispose for his *Accompt*, with the *Accompt* of the Charges and Expences, and Provision thereupon; my disposing thereof; my buying up Goods and sending them elsewhere by his Order, and for his Accompt, or sending away his consigned Goods in my Hands; Our mutual Draughts and Remittances for his Accompt: These, and what else concern or relate to my Management as Factor for another, you'll have orderly and distinctly recorded upon the following *Accompts*.

But first let us suppose that a Factor may have it in his Commission to make no Sales upon Time, but all for ready Money, or he may sell upon Time; and in this Case, either he is not accomptable for these Debts till he receive Payment, or no further than common Justice, according to the known Rules and Laws in these Matters, can oblige him for his Mismanagements; Or he is bound by Agreement for Security and Payment of the *Debts*. I shall explain the *Accompts* with a View to these Circumstances.

With your Employer keep these Accompts, viz.

1. *A. B.* his Accompt of Merchandize, (*viz.* which are consigned to me) *per Ship*—— &c. I make it *Debtor* for all the Charges cost me while in my Custody, and for my Provision on the Sales; It is *Creditor* when the Goods are sold for the Value of the Sale. The Ballance of this Accompt, is the neat Product of his Goods: See the following *Notes*.

2. *A. B.* his Accompt current is *Debtor*, for whatever he owes is, accomptable for, or ought to allow to me as his Factor, (which is not upon the *Debtor-Side* of the former *Accompt*) such as the Bills drawn on me, and my Remittance, for his Accompt; the Goods which I buy and send away by his Order; and for his Accompt, with the Charges and Provisions thereupon, *&c.* It is *Creditor* for what I owe him for his *Accompt*, as the Ballance of his *Accompt of Goods*, already mentioned, and his Remittances, or my Draughts for his *Accompt*, &c. In short, whatever I receive for his Accompt (which goes not to the former *Accompt.*) Consider the following *Notes*.

Note 1. *His Accompt of Goods* is distinct for every Consignation. If there is but one Kind, let the Title bear it, and make Columns for the Species and Quantities.

2. The Buyers on Time have particular Accompts, but to make a parallel betwixt these and proper *Foreign-Accompts*, you may use this general Accompt for all the Buyers, *viz. A. B. his Accompt of outstanding Debts*, tho the same Reason does not hold here, because the Buyers know only you, and when they have already

already an Accompt in your Books, it is more proper to charge it there: Or if you think this general Accompt of any good Use, you may use it for all these Buyers, and upon their particular Accompts, who have such already in the Books, make some *Note* whereby to know that they are *Debtor* on this *Accompt*, that nothing be forgot when you clear Accompts with them.

3. You may charge your Provision upon every Sale for the Value, and at every Sale for ready Money sub-duct all Charges and Provision owing, and for the Ballance of that Money, make *his Accompt of Goods Debtor* to his *Accompt current* (*viz.* below) and the *Debts* owing, remain upon the *Creditor-Side* unballanced till they are paid, and then do the same: But ordinarily the *Accompt of Goods* is not ballanced till all are disposed, or that your Employer demand his *Accompts*, annd then charge the *Accompt Goods* with all Expences and Provision due to you, and to his *Accompt current* for the Ballance of ready Money received for the Sales of his Goods, your Charges and Provision being paid, and give him up also an *Accompt* of his *outstanding Debts*, but the *Accompt* is not to be ballanced for these, unless he now takes the Factory out of your Hands; in which Case, make his *Accompt-Goods Debtor* to the Buyer, and assign him to the Debt, and his *Accompt current* will shew the true State of Affairs betwixt you, besides what Goods remain in your Hands.

4. When Rebatement is made to the Buyers at Payment, my Employer is bound to allow it, if it is made for Defect in his Goods, or by Order for Advancement of Money to answer his Bills, and then his *Accompt of Goods* or *Accompt current* is made *Debtor* for the same: In other Cases it may fall upon me as Factor, as when I have taken up his Money upon Rebatement before due, to serve my self; or when having insured the Sales, I make Composition with the Debtors altogether for my own *Accompts*, then *Profit*, &c. is *Debtor* for these Rebatements.

5. If by Order I send away any of his Goods consigned to me, having narrated it in the *Waste* or *Factor-Book*, I make his *Accompt of Goods Debtor* for the Charges; and also set on the *Creditor-Side* in the Quantity Column, so much sent away by Order, but without any *Debtor*, because the Hazard of the Voyage is my Employers, and I set the Quantity there only for my own *Memorandum*, but nothing in the Money Columns, and so the Ballance of my *Books* is noways spoiled. And if there was no Sale of his Goods, but the whole now sent away by his Order, I Ballance the *Accompt of Goods*, by making his *Accompt-Current Debtor* to it for the whole Charge on the *Debtor-Side*, and with that Sum set down the Quantity on the *Creditor-Side* of the *Accompt-Goods*.

6. If as Factor I oblige my self for the *Sales on Time*; then, when the Goods are all disposed of, (or at any time when I would make a Ballance) I carry the whole Ballance of his *Accompt of Goods* to his *Accompt-Current*, because it is all absolute Debt upon me, only I may distinguish the Articles that are not yet due: Or in this Case, because all the Sales are unconditional Debts upon me, I need keep but one *Accompt*, viz. *his Accompt-Current*, and make it *Debtor* for all whatever he owes me as his *Factor*, and *Creditor* for what I owe,

the

on an accomptable to him for his Accompt, and this will do well, eſpecially with the Uſe of a *Factor-Book*, which ſee deſcribed below. If that Agreement for the Sales is made after part of the Goods are ſold, make the *Accompt Goods Debtor* for the *Præmium* or additional Proviſion on the Sales already made on Time, and for all that follow; or Ballance the *Accompt* now, and make no more Uſe of it, but of the *Accompt-Current*.

N. B. Some uſe ſuch an Accompt, as *A. B. his Accompt on Time*, to which they make the *Accompt of Goods Debtor* for the *outſtanding Debts*; but it is unneceſſary, ſince theſe may as well ſtand ſtill upon the *Accompt of Goods*, till they are paid and then the Ballance goes to his *Accompt-Current*.

See further what I have ſaid about rendering and ballancing Accompts with your Employer, in *Chap.* III.

7. If I ſend away my Employers Goods by his Order conſigned to another, we may ſuppoſe, that Perſon ſerves our common Employer as Factor, and is accomptable to him immediately, and then I have nothing more to do after the Goods are out of my Hands: But if this Perſon, to whom they are now conſigned by Order, know no other but me for his Employer, I muſt keep *Accompts* exactly as in proper Trade, and only change the Title thus, *Voyage to—— for Accompt of A. B.*— You don't run the Hazard of the Voyage, and the mentioning *for his Accompt*, ſhews that. If the Goods were *A. B*'s formerly conſigned to me, the Voyage is *Debtor* only for the Charges and Proviſion for ſending them away, and alſo to *his Accompt of Goods*, for what it is charged *Debtor* for, to balance that *Accompt* and bring all the Expences together; but if part of the Goods upon that *Accompt* were already diſpoſed of, you may leave theſe Charges to be ſubducted from the former Sales, if this is not done already.

If the Goods now ſent away were bought by me, for *A. B*'s Accompt and by Order, I don't enter them in the *Leger*, but make *Voyage* to—— for *Accompt* of *A. B.* Debtor for the ſame, and Charges; and if they are loſt, *his Accompt current* is *Debtor* to the *Voyage* for the Whole.

When my Employer remits, or I draw for the Value of this Cargo, I give *his Accompt current* Credit; you'll ſay this is diſcharging him for what that *Accompt* was never charged, the Voyage having been made *Debtor*, but the Voyage being for his Accompt, makes him my *Debtor*, and therefore that Accompt repreſents him, and ſo it becomes the ſame Thing, to give him Credit upon his Accompt current; for when the *foreign Accompts* are cleared, there will nothing remain to be brought into *A. B*'s Accompt current, but the Gain upon the Voyage, whereby he comes at laſt to have Credit for the whole Cargo and Profit as he ought in Juſtice to have, the Effects being ſuppoſed in my Hands by the Factor's Return; and in Caſe there be Failure in the Returns, (I not being anſwerable) then I make his *Accompt current* Debtor, to the *Accompt* that ſtood laſt *Debtor* for the Value; or if the Goods are not diſpoſed, or at leaſt the Value not returned, I look on that Article on the Credit of his *Accompt* current, as no Debt upon me, being balanced by what is on the *Debtor* Side of the *foreign Accompt* that ſtands laſt charged.

For the Factor's Accompts make them thus, *viz. C. D. Factor at* —— *for A. B's Accompt of Goods, Accompt of Sales,* and *Accompt current,* and use these *Accompts* the same Way as all were for your own Accompt; there is no Difference but this, that where *Profit,* &c. would be *Debtor* or *Creditor* in that Case, here *A. B. his Accompt current* is *Debtor* or *Creditor,* and that you are not answerable for *C. D*'s Returns, unless you insure the Effects in his Hands; and for the neat Proceeds of his Goods upon these *foreign Accompts,* it belongs to your Employer, and must be carried from them to his *Accompt* current. I need say no more about this *foreign Factorage,* it will be at all Times evident by the Use of these *Accompts,* how the State of your Employer's Affairs, under your Direction, stand.

Of the Factor-Book.

This *Book* is ruled like the *Journal,* but numbred in *Folios* like the *Leger*; on the left Side is set down in a plain Stile, after the Date, the Goods received in Commission to sell for Accompt of another, the Article begins thus, *viz.* this Day received, out of —— Ship, *&c.* (or from such a Person) the following Merchandize consigned to me by *A. B.* to sell for his Accompt, at the Prices following, (or, to the best Advantage, without Limitation) being marked and numbred as in the Margin. Then write down all the *Species* and *Quantities,* with their *Marks* and *Numbers.* After this, write down all the Charges at the Receipt, and upon the same Side write all the subsequent Charges, and your Provision on the Sales. Upon the right Side write, how they are disposed of; and when all are disposed, if you sum up that Side, it gives the total Amount of the Sales; and the total of the Charges and Provision on the other Side being also summed, the Difference is the neat Product of the Cargo, (all the out-standing Debts being paid). What is thus entred in the *Factor-Book* needs not be entred in the *Waste-Book,* that being instead of this, and designed that we may see the whole Transactions relating to our Employer's Goods altogether, which indeed we have upon Employers *Accompts* in the *Leger,* tho' not so largely narrated, yet is sufficient, yet Particulars being at large in the *Waste-Book,* especially to one who deals little that Way, otherwise such a separate *Book* may be reasonable: [The Form and Use of it is the best a Super-cargo who goes abroad with Goods, can take] But when you use a *Factor-Book,* then for your *Journal* fill it up out of this in common Form, as out of the *Waste-Book,* the Charges paid at Receipt goes into one Post, and for the subsequent Charges and your Provision, you need only make one Post for them all, when the Accompt is finished and to be given up to your Employer.

Every other Transaction relating to my Employer's Affairs under my Direction, goes into the *Waste-Book;* and when the Buyers of his Goods make Payment, besides the *Waste-Book* Record, 'tis fit you make a Mark upon the Article in the *Factor-Book,* to show it is paid.

§ XV. *Of* Company-Accompts.

THERE will be a great Variety here according to the Nature and Conſtitution of Companies, and the Conditions upon which Men enter into Partnerſhip, I don't take it for my Buſineſs to inſiſt upon every Suppoſition that might be made, my chief Deſign in all this Treatiſe being to give a true and univerſal Notion of the Method of *Debtor* and *Creditor*, by explaining the general Principles, and making as much Application as may ſufficiently illuſtrate theſe: For the whole Knowledge of *Book-Keeping* is comprehended in a few fundamental Rules and Notions, ſo that the Deſign or End, and the Method in general, being well conſidered and diſtinctly apprehended, which indeed requires that theſe Things be delivered with Perſpicuity and Clearneſs of Expreſſion (as I have endeavoured) I ſay, after that, it is not an infinite Variety of Application which is neceſſary to illuſtrate the general Theory; a few Caſes well choſen, (eſpecially if you ſee practical Examples thereof duly ſtated in Form, as is done in the following *Waſte* &c. *Books*), will fix the Notion of this Method, and open all the Nature of it, ſo as to put one who has duly conſidered the eſſential Parts which are few and general, in a Capacity to apply it to any Subject, and form ſuch arbitrary Schemes, (ſtill within the Limits of the general Rules) as ſhall exactly anſwer the End of *Book-keeping*: Therefore I have thought it ſufficient upon the Head of *Company-Accompts*, to make the Application in a few Inſtances of *private Partnerſhip*: And for the more Diſtinctneſs, I divide them into two Branches, and upon each Branch make two Suppoſitions, concerning the Conſtitution of the Company.

Branch 1. WHEN I as Partner give in my Share of the *Stock*, which is to be under the Direction and Management of another Partner.

Branch 2. WHEN I am Partner, and entruſted with the Direction and Management.

AGAIN, as to the Nature of the *Company*, I ſuppoſe 1*mo*, A very ſimple Kind, which I call an *unfixt Company*, *i. e.* they have no ſtanding and fixt *Stock*; but, for Example, buy from Time to Time Parcels of this or the other Kind of Goods, to be diſpoſed of in domeſtick or foreign Trade, and withdraw their Shares of the Value ſold, when they pleaſe; by which Means their Stocks or Effects in Company, perpetually vary according to the Value of theſe different Tranſactions, and ſuch Partnerſhip may be entred into for one ſingle Parcel of Goods or Voyage, or they may continue for ſome Courſe of Trade. 2*do*, I ſuppoſe a fixt Stock which every Partner furniſhes his Share of, and this to be the ſubject Matter of all the ſubſequent Tranſactions of Trade.

BRANCH I. *When another Partner has the Management.*

SUPPOSITION I. *When the Company is un-fixt.*

IN this Caſe the Manager is obliged at all Times to exhibite fair and diſtinct Accompts of the State of Affairs to his Partners; I have no more to do,

but to keep plain Accompts of what I give, or owe to the Company, and what I receive; which I do under these Titles, *viz.* 1*mo*, *A. B.* (for my Partner Trustee) *my Accompt with him in Company*; (or any other Share, and if there are more Partners, you may say *with him and Partners &c.*) I make it *Debtor* for all that I give or owe to the Company as my Share of the Stock and Charges, that is, of the first Stock or any subsequent Purchase, and all Charges which I am accomptable for a Share of: It is *Creditor* for all that I receive, to Accompt of my Concerns in the Company, or allow for the same, [See the *Note* 2d below] and if any Accident happen whereby the Goods are lost, as at Sea, it is *Creditor* by Profit and Loss for my Part, to discharge *A. B.* his Trust.

Note 1. The Partenrs may have Accompts in my Books, as other Men have, and even the Partner Trustee must have another Accompt, which I call *his proper Accompt*, because that described is the Accompt of a mere Trust, and must be distinguished from the real and absolute Debts betwixt us, upon other particular Dealings: Besides which, there may be absolute Debts betwixt us, relating to the Company Concerns, as when he pays or stands bound for the Whole or Part of my Share of any Effects purchased for *Company-Accompt*, or I the like for him, as if he should draw Bill on me for Payment of more than my Share; therefore erect the following Title, *viz.*

2*do*, *A. B. His proper Accompt* I make it *Debtor* and *Creditor*, (as the other Partners, who may have Accompts) for what we mutually owe, and pay upon other particular Dealings, or what he stands bound for, or pays for me, or I for him of our Shares of the Effects purchased for the Company.

Note 2d, when *A. B.* advises of Money received for Effects of the Company's sold, unless I immediately draw my Share from him, I make *his proper Accompt Debtor* to *my Accompt in Company*, for the same; and so I shall more readily know what Money is in his Hands; but especially, this is useful, when I was owing him a Debt, particularly for *Company-Accompt*, which he now pays himself out of the Money come into his Hands; and if he charge Interest for what he has advanced for me, I give his *proper Accompt* Credit for the same. 3. When the Partners come to a Reckoning with their Trustee, he will charge them with his Provision or Allowance as Manager, and other petty Charges or Interest for Advance of Money, which have not yet been charged to Accompt; for my Share of all which, I make *my Accompt in Company Debtor* to *his proper Accompt*. And now, for what *A. B.* gives for clearing of his Trust, let it be charged to the Accompts, according to their Uses; and then the *Accompt in Company* will show what I have gained by the Partnership, and *A. B.*'s *proper Accompt* what other real Debts are betwixt us. See more concerning this, in Chapter III.

SUPPOSITION II. When I am concerned in a standing Company, I make *my Accompt in Company with A. B. &c.* as above, *Debtor* for my Share, stocked in or owing, and this Accompt I never touch more till the *Company-Accompts* are examined and ballanced with the Managers; and then if I withdraw my Stock, this Accompt is *Creditor* for it; what Gain or Loss falls to my Share, I state

to

to the Accompt of *Profit and Loss*, and if the Company think fit, either to encrease or diminish their Stocks, I make this Accompt *Creditor* for the Part lessened, or *Debtor* for the Addition.

In this Case I give also the Partners particular Accompts in my Books, and for the Partner, who by being chief Manager, gives his Name to the Company, upon his *proper Accompt*, I place every Thing (except what is already said to belong to the former Accompt) which I give or receive from him upon *Company-Accompt*.

BRANCH II. Of Company Accompts, when I am Manager.

SUPPOSITION I. Of an unfixt Company.

Every Partner keeps *Accompts* for himself by the former Directions; and I am bound to keep *Accompts* for them all, (because their Effects are in my Custody, and under my Management) which I may do either in my own Books, if their Affairs are but simple; or I may do it in separate and distinct Books, if the Value of their Affairs require it, and that it be worth the Pains. I shall take the most simple Case first, *viz.* That I record the Company's Transactions in my own Books, which is done under these Titles, *viz.*

1. *Accompt of Goods in Company with* ———. Use this Accompt the same Way as if the Goods were all your own, *i. e.* make it *Debtor* for all that's bought in, or purchased for the Company's Accompt, with all Cost and Charges; and *Creditor* for what's disposed out of the same. *Note*, You may use a general *Accompt*, or a particular one for every Kind of Goods, as you think convenient. Also you may name all the Partners and their Shares in the Title; or say only—— *with A. B. and Partners*, if there are any more; or give it any other Distinction you please, whereby it may be known, to what Company the Goods belong.

For every Partner keep the following Accompts.

2. A. B. *his Accompt in Company with* ——— it must be *Creditor* for his Share of all Goods (or Stock) of the Company, stocked in at first, or brought into it afterwards; and of all Charges and Expences of Merchandize. [See *Note* 5.] and of the neat Gains. On the *Debtor-Side* it shews what I have paid my Partner to Accompt of his Concerns in Company, or given out of his Effects in my Hands, for his Accompt: In short, how his Share on the *Creditors-Side* is exhausted out of my Hands either in Bills, Goods, or Money given out for his Accompt, or what else he ought to allow for the same, as his Share of all Losses.——This is an Accompt of a meer Trust, and therefore must the following Accompt be kept.

3. A. B. *his proper or particular Accompt*, I make it *Debtor* and *Creditor* (as any other Persons Accompt in proper Trade) for what we mutually owe, and pay upon other particular Dealings; and even Things relative to the Company's Affairs, which fall not within the Use of the former Accompt; particularly, it is *Debtor* to me for what I advance or am bound for, of his Share

of

of Goods or Charges that belong to the Company, and *Creditor* for his Payment of this, or what he advances, or is engaged for my Share: As when I draw Bill upon him for more than his own Share, which he accepts for my Accompt; but if he accepts for the Accompt of another Partner, I give him Credit for no more than his Part, and give that other Credit as if I had drawn on him.

If these three Titles be diligently compared, the *Debtors* and *Creditors* in all Transactions of domestick Trade in Company will be readily discovered; but to make the Thing as plain as I can, I shall subjoin a few Cases.

1. If my Partners give me *Cash* to be laid out for their Accompt in Goods, I make *Cash Debtor* to their *Accompt in Company*, for their Share: Or make *Cash Debtor* to Partners *proper Accompt* for what he gives; and when that is laid out, make this *Accompt Debtor* to his *Accompt in Company*: Both Ways are equal upon the Matter; the first is shortest. When the Goods are bought, they are *Debtor* to *Cash*: But if they stock in Goods, or pay the Money at the buying, or that I draw upon them for their Shares; I make the *Accompt Goods Debtor* to their *Accompt in Company* for their Share, and to what I put in for my Share.

2. If I buy Goods to the Company from a Stranger, or sell them out of my private Effects, either I have Money in my Hands that belongs to the Partners, or not; in both Cases I first charge the *Goods in Company Debtor* to *Partners Accompt in Company*, for his Share, and to what I have given, or the Persons to whom I owe my own Share; Then, I make Partners *Accompt in Company Debtor* to *Cash* for so much of his I have given out at this time; because this is a real Payment to him of that Money in my Hands: And for what I have advanced, or stand engaged for on his Accompt, I make *his particular Accompt Debtor* to *Cash*, &c. If the Partners pay in their Shares at the buying, or stand personally obliged for the same (when bought from a Stranger) or when I draw Bill on them for their Shares immediately, the Seller has Credit for nothing but what I owe him for my Share, and there is no more to be done than what is first said. But if I draw on any Partner for more than his Share, *his proper Accompt* must be *Creditor* for that. [See *A. B. his proper Accompt* above described.] If I pay these Goods by a Bill on one who owes the Company, the Goods are *Debtor* as before to Partners *Accompt in Company* to shew their Share, but because it is paid by his Share of this Debt, make his *Accompt in Company Debtor* (to discharge me) to the Person, on whom the Assignation or Bill is drawn.

3. If I pay a Debt owing by the Company to my self, or to another, out of their Money in my Hands, or by a Bill on one who owes to the Company; their *Accompt in Company* (whose Money I gave out) is *Debtor* to their *particular Accompt* (for the same Reason as in the last Case.) If the Debt is paid to my self, there is no more to be done; if to another, I charge him *Debtor* to the Accompt that pays him, to ballance his Accompt. If the Debt is more than Partners Share of *Cash* in my Hands amounts to, yet there is no more to be done, for their particular Accompts stand *Debtors* ever since the Debt was contracted.

4. If

4. If my Partner for Payment of a Debt, which he owes me by his particular Accompt, assign me to his Share of a Debt owing to the Company, (which I accept as Payment) his *Accompt in Company* is *Debtor* to his *particular Accompt* for the Value of that Share; for it is so much of his Concerns received from me: If that does not pay his Debt to me, and he draws a Bill on that same Person who owes the Company, or any other, for the remainder, that Person is *Debtor* to his *particular Accompt*, for the Value of the Bill.

5. If by Order I take Wares for payment of a Debt owing to the Company —— *Goods in Company* (received) are Debtors to the Persons who gives them, or if they are received in *Barter*, they are *Debtor* to the Goods given out; and for these nothing need be put on the *Creditor-Side* of the Partners Accompt in Company, becaufe they are received only in return for other Value of the Company's, which is already on the *Creditors-Side* of their Accompt: But to shew every Step, I may make the Goods received *Debtor* to Partners *Accompt in Company* for his Share thereof, and at the same time make this Accompt *Debtor* (to discharge my self of what's given out) to the *Accompt-Goods* given out in the one Case, and to the Person who now pays the Debt in the other Case. With both Methods if there is more received than given out, or than the Debt which was due, the Superplus paid or owing, must be considered as a new Purchase, and stated as above in *Case* 2.

6. If I give out Goods of the Company's, for payment of a Debt contracted for their Accompt, the Receiver is *Debtor* to the *Accompt of Goods*, and Partners *Accompt in Company* is *Debtor* (to discharge me) to his *particular Accompt*, for his Share thereof; this also discharges him if he is still owing his Part of that Debt; and if not, gives him Credit, for which he may draw upon me.

7. If any buyer of the Company's Goods draw a Bill on any Partner for the Price, that Partners *proper Accompt* is *Debtor*; and if I was owing that Partner (*i. e.* he is Creditor) by his *proper Accompt* for the Equivalent become due at this time, and which he demands, the one Ballances the other, and this Sale is as ready Money to the Company; if that Partner be *Creditor* for nothing, and by Agreement with me, takes this Bill in Payment of his Money in my Hands, I make his *proper Accompt Debtor* as before; and at the same time make his *Accompt in Company Debtor* to his *proper Accompt* for the Sum, at least so much thereof as goes to that Payment: Thus his *proper Accompt* is ballanced, and I have paid him so much of his Concerns. But it must be minded, that this way the Bill becomes also ready Money to the rest of the Partners for their Shares, if they please to draw on me for it.

8. If one Partner assign his Concerns in Company to another, make his *Accompt in Company Debtor* to that other's *Accompt in Company*; but if it be an Assignment for ready Money in my Hands, the Assigneys *proper Accompt* is *Ceditor*.

9. If any Partner sell of the Company's Goods, and receive Payment, his *proper Accompt* is *Debtor*; if I owe him, or he takes this to Accompt of his ready Money in my Hands, do as above.

10. If I draw a Bill on one Partner payable to another, the Assigney's *proper Accompt* or *Accompt in Company*, is *Debtor* (The first, for Payment of what I owe him by that Accompt. The second, if it's for his Concerns in Company) to the other's *proper Accompt*.

11. For small Sales made one Time of the Company's Goods, to Persons who have no other Accompt with you, charge and discharge the Title, *Retail Accompt of Sales in Company*, &c.

12. If I take Wares in Barter, or for Payment of a Debt owing for Wares of the Company, I do as formerly directed; or if I take them to my self, they are proper Goods, *i. e.* they are mine, and the Value is so much ready Money in my Hands, belonging to the Company; but this must be supposed to be in a Case where he who gives me these Wares, was willing to give Money or Goods; otherwise it is not ready Money to the Company, unless I take them for a Debt due to the Company, the Term of Payment whereof was past, for then it is ready Money, and the Partners may draw on me for their Shares, when they please.

13. When I lay out Money for the Company, and have none of their's in my Hands, I ought to have Interest allowed me till the Time, I receive Payment thereof; when I receive Money of their's, I charge their *proper Accompts Debtors* to Profit and Loss for the Interest owing, and then paying my self out of their Money, I make their *Accompt in Company Debtor*, (because this Money is so much of their Concerns) to their *proper Accompt*, which discharges them; But if they pay this Debt and Interest any other Way, I make the Accompt by which they pay *Debtor* to *Profit and Loss*, and to their *proper Accompts*.

N. B. Some propose to make Partners *Accompt in Company Debtor* to his *proper Accompt*, for his Share of the ready Money received by me for the Company's Effects, that it may be seen at all Times what Money of the Partners, is in my Hands, and their *proper Accompts* is made *Debtor*, when that Money is given out by me. This is needless Labour, especially in so simple Societies. The other Accompts belonging to the Company will shew what Money is in my Hands; and then let their *Accompt in Company* be charged for what I give out, as above directed. When the Company's Affairs are more considerable, I have shown you a little below what you may do.

Thus much I thought fit to deliver; and now after all it will be manifest that the Explication of the Use of every Title will include all these Cases; so that if they are compared with them, the bare minding the general Use of the Titles, will be sufficient for these, and any other Case we may suppose: Providing also we take along the general Rules for other Accompts that may be concerned, which are never to be transgressed; for 'tis plain, every Transaction of Company Trade must be recorded, the same way as the like Transactions of proper Trade (with the bare change of some Titles); the only thing that's new here being, the Record I must make for my Partners Shares due to them, and by them.

Foreign

Foreign Accompts in Company.

THESE are kept every way like proper Accompts foreign, only in the Titles change *My* into *Our*, and let it be known what Company the Accompt belongs to, thus, *viz. Voyage*, &c. *for the Accompt in Company with* —— &c. *A. B. Factor our Accompt of Goods*, &c. *our Accompt of Sales*, &c. *and our Accompt current.* These Accompts are to be uſed the ſame Way as in proper Trade, in like Circumſtances; and there can no Difficulty occur, if you underſtand and mind the true Deſign and Uſe of the two Accompts above directed to be kept for every Partner, which I ſhall briefly repeat, *viz.* Take care to make Partners Accompt in Company *Creditor* for his Share of all the Effects belonging to the Company, and of Charges, (becauſe theſe inhance the Value) and *Debtor* for all that goes from you of the Company's Effects, either in immediate Payment to the Partners, or where one thing goes for another (for this is the moſt exact way, as it ſhews the various Steps of Affairs.) Their *particular Accomps* are *Debtor* and *Creditor* in ſuch Circumſtance as other Men are: And beſides, as to the Company's Affairs, are *Debtors* for what you advance, or are bound for on their Accompt; and *Creditor* for the Payment thereof, or which the advance or engage on your Accompt; alſo *Debtor* for their Share of things brought into the Company, tho' purchaſed with their own Effects, becauſe at the ſame time, they are made *Debtors* in their *Accompts in Company* for their Share of theſe Effects delivered. Now if you conſider the *foreign Factors Accompts* as all were for your ſelf, you'll eaſily ſtate things to his Accompts; and by the Uſe of the foreſaids Accompts with your Partners, it will be as eaſy to ſtate their Concerns, either of Debt or Credit; and therefore I ſhall add but two Caſes. 1. When our Factor ſhips Wares in return for Wares ſold of the Company's, the Wares receiv'd, or the Voyage, is Debtor to our Factor for the Value of his Accompt, and alſo for the Charges paid here, when receiv'd, and being receiv'd for Effects belonging to the Company, given out, I make Partners *Accompt in Company Debtor* to his *proper Accompt* for his Share, deducting his Share of the Charges paid here, unleſs you give your ſelf the Trouble to make his *proper Accompt Debtor* to his *Accompt in Company* for his Share of theſe Charges.

2. IF my Factor, ſhip Goods to our Factor for Company Accompt, Factor *my Accompt current* is *Creditor* by *Voyage in Company*, &c. and Partners *particular Accompt Debtor* to his *Accompt in Company* for his Share. But if our Factor ſend Goods to my Factor in return for Company Accompt, Voyage (proper) is *Debtor* to Factor our Accompt, then Partners *Accompt in Company Debtor* to his *particular Accompt* for his Share, becauſe I am abſolutely in his Debt for this, but eſpecially to ſhew the Steps of our Affairs.

Note, The petty Charges and Proviſion to me as Factor for the Company, may either be ſtated to the Accompt of Goods in Company, or erect an Accompt of *Profit* and *Loſs* for every Company, and make it *Debtor* and *Creditor* for all Gains and Loſſes, which belong to the whole Company, upon the ſame Occurance as in proper Trade. See more of this in *Chap.* III.

And now when I have done with this Inſtruction for keeping *Company Accompts* in my own private Books, if you ask me where my own Shares ſtand, I tell you they ſtand upon every Accompt which is either *Debtor* or *Creditor* upon *Company-Accompt*, and my Partners Share being juſtly placed to his Accompt, the Remainder is my Share, and ſtill in my own Hands with the common Stock.

How to keep the Company's Accompts in ſeparate Books.

If we ſuppoſe the Company is ſtill unfixt, and their Affairs to be of that Conſequence, that it is neceſſary I as *Partner* or *Book-keeper* ſhould keep Records thereof in diſtinct and ſeparate *Books*, then I would chuſe this Method.

1. Let there be a ſeparate *Waſte-Book*, wherein every thing is recorded that concerns the Company.

2. For the *Company Leger*, let it contain theſe Titles, *viz.*

1. Every Partner an *Accompt in Company*, and a *particular Accompt* for the Uſes above-mentioned. 2. I would give my ſelf (by my Name) two Accompts of the ſame kind, and for the ſame Uſes, *viz. My Accompt in Company* ſhould ſhew on the *Creditors-Side* my Share of all Goods, *&c.* like the other Partners; on the *Debtor-Side* it ſhould ſhew what Goods or Money of the Company's I take to Accompt of my Concerns. *My particular Accompt* ſhould ſhew on the *Creditors-Side* what the Company (or any one Partner) owes me for Goods paid for them, out of my private Caſh or Effects; or any other Thing paid for them as they are Partners of the Company; or what I am engaged for them on my private Credit. On the *Debtor-Side* let it ſhew what Payment is made to me of theſe Debts, and alſo my proportional Share of Goods bought for the Company, and Charges on them, owing on their Credit; or Money borrowed on the Company's Credit, for which my Accompt in Company is to be Creditor as above directed. 3. There muſt be an Accompt *Caſh in Company Debtor* for every Article I receive from others, or bring from my private Caſh any manner of way, for the Company's uſe; or from any Partner, if it relates to his Concerns in Company; and *Creditor* for all I give out of that which is once put on the *Debtor-Side*.

Tho' all the Company's Effects are in my Hands, yet its neceſſary I have Accompts in the Company Books (titled with my Name) the ſame way as the other Partners have, for theſe Reaſons, *viz.* that there be no Tranſactions in which the *Debtor* and *Creditor* be, the one in my private Books, and the other in the Company's, which would be abſurd; for then neither of theſe Books could be brought to a Ballance, unleſs the other were ballanced too, which is contrary to the Deſign of keeping ſeparate Books. This is remedied in the Company-Books by the Uſe of my Accompts in it. But then as to my private *Leger*, there muſt neceſſarly be kept in it ſuch an *Accompt* as *my Accompt with*, &c. whoſe Uſe is to contain on the *Debtor-Side* all the Articles of Money, Goods, Bills, *&c.* which go from my private Effects to the Company for my Share, or

what my private Credit is engaged for upon the Company's Accompt, and it is *Creditor* for whatever I receive or transfer from the Company to my private Concerns, either to Accompt for my particular Share in the Company, or for Payment of what was owing me by the Partners; so that the Use of this Accompt in my private *Leger*, is for keeping up the Ballance thereof, upon the transferring of any Thing from my private Concerns into the Company, or from this to that. The more distinct State of my Concerns in the Company, you'll find in this new *Leger*.

By this means my private Books may be ballanced when I please, without touching the Company's Books, wherein I consider my self as a Partner. Every one who deals with the Company on their Credit, has an Accompt in their Books; (the same Person may have an Accompt in my Books for his Dealing with me.)

Now with Respect to this way of keeping Company Accompts, I'm convinced I need not make a multitude of Examples; whoever understands the simple Scheme of *Company-Accompts* kept in my own Books, can want no more but the Account I have already given of this Method, with the Use of the several Titles, which ought to be well considered and compared together. I am unwilling to leave any Thing I deliver on this Subject, in the least Obscurity, and yet I would avoid the other extream of confusing a Learner with idle Prolixity, therefore I shall add but a few Particulars.

1. With Respect to this Method of *Company-Accompts*, take notice in the first place, what you transfer from your private Concerns into the Company's, that it be charged in your own Books, and then look upon it as the Company's, and charge it in their Books according to the Use of the Titles above defined.

2. If you remember that nothing is put to any Partners *particular Accompt*, or *Accompt in Company*, or *Goods in Company*, but what would have gone to the same Accompts, if they had been kept in my private *Leger*, every Thing will be easy, for I have nothing to do particular to this Method, but charge my Proportion of every thing to *my Accompt in Company*, and *my particular Accompt* in these separate Books, as I do with the other Partners; and then to take heed what goes out of my private Effects to the Company, or what from this to the other; that it be duly posted in my private *Leger*. But more particularly,

3. When I give in Goods (taken out of my private Effects) or Money to the Company, I first make *my Accompt with* —— &c. *Debtor* for it in my private Books; then it becomes of the Company's Effects, therefore in their Books, I make *Cash in Company* or *Accompt Goods in Company Debter* to *my Accompt in Company*, for my own Share, and to the Partners Accompts in Company for their Share, which they lay in, or I for them, but then I must mind their Debt to me, and make their *particular Accompts Debtor* to *my particular Accompt* for their Shares owing me; and when they pay me, I discharge their *particular Accompt*, and make mine *Debtor*; and transfer the Thing received into my private Accompts by Means of the Title *my Accompt with* —— &c. in my own Books.

4. If I buy Goods for the Company, and pay them with Cash of theirs in my Hands, make the *Goods in Company Debtor* to each of our *Accompts in Company*,

pany, for the Shares, and then make the same *Accompts in Company Debtor* to *Cash in Company*, for each one's Share of that *Cash* given out; and thus Things are in a distinct Ballance. If there is any Thing given out of my private Concerns at this time as if I pay the whole or Part, out of my own *Cash*; or the Goods be sold out of my private Effects to the Company, besides recording it in my *Leger*, the Partners *particular Accompts* are *Debtors* to *my particular Accompt*, in their Books for the same; when they pay me, do as last directed.

5. If Goods are bought for the *Company on Time*, either they are bought on the Company's Credit, and then the Seller has Credit in their Books by each Partners (and my own) *particular Accompts*, each for our Share, or they are bought on my private Credit, and then the Seller has Credit in my Books, by *my Accompt with* —— &c. the *Accompt Goods in Company*, in their Books, is *Debtor* to each *Accompt in Company* for the Shares, in both Cases, and for what the Partners owe me in the last Case, make their *particular Accompts Debtor* to my *particular Accompt*.

6. If I take Partner's Share of the Company's, *Cash* come into my Hands, for Payment of what he owes me upon *Company Accompt*, or if he pay me any other way, in both Cases *my particular Accompt* is *Debtor* to his, to discharge him; and also in the first Case, his *Accompt in Company Debtor* to *Cash in Company* to discharge me; then turn the Thing received into my private *Leger*, as above directed. If this Debt was paid to another, who had Credit in the Company's Books, the Receiver is *Debtor* to mine, and to each Partners *particular Accompt* (who owes) for our Shares of this Cash paid, and our *Accompts in Company Debtors* to *Cash in Company*. If the Debt I pay is more than this *Cash in Company* amounts to, so that I advance any Thing out of my private Concerns, or when I pay the whole Debt with private Effects; the Partners *particular Accompts* stand *Debtors*, since the first contracting the Debt, and the Receiver is made *Debtor* to my *particular Accompt*, for what I pay out of my private Effects, and let it be stated in my private *Leger*, as above. If the Person who is now paid of this Debt had Credit for the same in my private *Leger*, he is made *Debtor* there to *my Accompt in Company*, &c. and in the *Company's Leger*, each Partners (and my own) *Accompt in Company Debtors* to *Cash in Company*, for our Shares of what is paid out of that; and because *my particular Accompt* was *Creditor* for the whole Debt, being contracted on my Credit, therefore *my particular Accompt* is *Debtor* to their *particular Accompts* for their Shares of the Debt paid with their Money; and if whole or part is paid with my private Effects, there is nothing to be done for that in the Company's *Leger*, the Partners *particular Accompts* standing already *Debtor* for their Shares of the Debt now paid.

7. For what I take out of the Company's Effects to Accompt of my Concerns, *my Accompt in Company* is *Debtor* for it (as the other Partners for what they receive) and then it becomes private Effects, and to be stated in my own *Leger*.

N. B. The Partners for their private Dealings with me, have Accompts in my own *Leger*.

I'm affraid I have ſaid more than enough on this Part, and I think the Diſinition of this Method, and the Uſe of every Title contains all, to one who underſtands the ſimple Scheme of *Company Accompts* kept in my private Books; I ſhall only obſerve, That it is rare if unfixt Company's need to have ſeparate Books; however, to compare theſe Inſtructions with the Deſign of *Book-keeping*, and the more general Notions thereof, may prove very helpful to one's forming a comprehenſive and univerſal Idea of this Art.

BRANCH II. *Of Company Accompts.*

SUPPOSITION II. *Of a fixt and ſtanding Company, (as already defined.)*

The Affairs of this Kind of Society, tho' they may be recorded in my Books by the former Rules, yet it is better they be kept in diſtinct Books, and the Method is very eaſy.

1. There muſt be a diſtinct *Waſte-Book*, and *Journal* too if you pleaſe.

2. A *Leger*, in which all the real Accompts, that is, Caſh and Goods belonging to the Company muſt have Spaces; alſo every Man who deals with the Company upon its Credit, and *foreign Accompts* with the Company's Factors; or any other Accompts; for the ſame Uſes as in proper Trade; *Laſtly*, every Partner (and my ſelf) muſt have two Spaces, an *Accompt in Company*, and a *particular Accompt*, the Uſes of theſe are, *viz.* Every one's *Accompt in Company* is made Creditor for his Share of the Stock, and it ſtands ſo, for there goes no other Thing to that Accompt, except the Company increaſe or diminiſh their Stock, or at a ballancing of their Accompts, of which we ſhall hear below; then for the *particular Accompts* they are made Debtors for what any of us receives out of the Company's Effects, and Creditor for whatever any of us gives in of our private Concerns, to the Company, (excepting the capital Stock) either Money lent to the Company, or Goods ſold to it, or bought on our private Credit, or Bills payable to the Company, or to theſe whom they are Debtors to, *&c.* All theſe Debts or Credits are underſtood to be owing to, or by the whole Company; I muſt mind alſo that what goes out of, or comes to my private Concerns, be recorded there by Means of an Accompt in my private *Leger*, which (as in the former Scheme) I title *my Accompt with*, &c. this being carefully minded, all the Tranſactions belonging to the Company's Affairs are recorded in their *Leger*, as if it were proper Trade, *i. e.* by the general Rules for the Uſe of a Man's Accompt, and an Accompt of Goods, *&c.* the particular Accompts, (for the Partners) being charged and diſcharged as any indifferent Perſon's Accompt, who is Debtor to, or Creditor by the Company, the Difference betwivt this *Leger*, and the *Leger* for the unfixt Company is, in that there being no fixt Stock, their Accompts in Company were perpetually encreaſed, by their Shares of every new Purchaſe or Bargain, and their particular Accompts Debtor for what they owed; but here the Stock being fixt, is the Subject of all the following Tranſactions of Trade; ſo that as *Book-Keeper* I have nothing to do, but give their *Accompt in Company* Credit for their Stock,

being

being accomptable for their Effects, and the Product, I record every Tranſaction in their *Leger*, as it were my own, and make every Partner's *particular Accompt* Debtor and Creditor, as he receives any Thing from the Company, or the Company from him, and the ſame with *my particular Accompt*; for I conſider my ſelf in a double Capacity. 1. As *Book-Keeper* to the Company, I do every Thing as if I were not a Partner. But, 2. As I am, I muſt give my ſelf Accompt in their *Leger*, as I do to the reſt of the Company; and if at any Time the Company require to balance their Books, I am accountable for all the Balance of Money or Goods found to be in my Hands by theſe Accompts, and for what I am Debtor on my particular Accompt, or any other Partner or Perſon whatever, 'tis all underſtood to be Effects belonging to the whole Company; and what I or any Partner (or any other Perſon) is Creditor for on our particular Accompt, or our Accompt in Company, is a Debt due by the whole Company to be cleared out of the foreſaid Effects; and thus I have a diſtinct State of their Affairs, and can make up my Accompts with Eaſe.

N. B. The Partners for their private Dealings with me, have Accompts in my Books.

I know nothing more that needs to be added here, and I ſhall but mention one or two Things, becauſe it has been my ordinary to illuſtrate a general Rule, by a few Particulars.

1. When the Company gives in their Stocks, I make *my Accompt with*, &c. (in my private Books) Debtor to what I ſtock in; then in the Company Books make *Caſh in Company*, ſuch Goods or other Effects as are ſtocked in, Debtors to each of our Accompts in Company for our Shares; if afterwards they increaſe or diminiſh their Stock, it is plain what we muſt do.

2. But if you would have an Accompt, in which all the Shares of the Stock ſhould be ſeen at all Times, and no other Thing, then make Caſh, *&c.* in Company, (*viz.* the Things ſtocked in) Debtors to *Stock in Company* for the Shares; but immediately Balance this Accompt of Stock, and make it Debtor to *our Accompts in Company*: This Method will appear neceſſary, if we conſider the following Article.

3. If any Partner woth not immediately give in his Stock, becauſe I muſt begin the Company's Books upon their firſt Exiſtence; therefore I ſtate the Things actually given in to, and for the Partner who has not paid, make his *particular Accompt* Debtor to *Stock*, and that Debtor to *his Accompt in Company*; if no *Stock Accompt* is kept, make his *particular Accompt* Debtor to his *Accompt in Company*,) and when he pays it in his particular Accompt is diſcharged.

N. B. If you do not extend theſe Shares unpaid upon the Accompt Stock, it will appear at a Glance what are paid, what not: When they are paid, draw them out, and diſcharge his particular Accompt who owed.

4. If I or any Partner take a certain Time to pay in our Stock, for which we are to give the Company Intereſt, let that Partner's *particular Accompt* be made Debtor to *Intereſt Accompt*, or *Profit and Loſs in Company* for the ſame, as well as to his *Accompt in Company* for his Stock.

5. If

5. If any Partner ſell his Share, or any Part thereof, the Perſon to whom he ſells muſt have an Accompt in the Company's Books, and *his Accompt in Company* Creditor by the Seller's *Accompt in Company*, for the Value. But,

6. If the Company being (for Example) five in Number, take in a ſixth, quitting him ⅙ of their Stocks, I would make their *Accompt in Company* Debtors to their *particular Accompts* for that ⅙ Part, and when they receive it, their *particular Accompts* are Debtors, or receiving it immediately, their *Accompts in Company* Debtors to what they receive; and for the Partner now taken in, I make his *Accompt in Company* Creditor by his *particular Accompt*, or by what he pays in for his Share. If he pays or is owing any Thing of Allowance to the Company for his Privilege, *Profit and Loſs in Company* is Creditor for it, by his *particular Accompt*, or what he pays; but let it be minded, if any Partner was owing his own Share upon Intereſt, his *particular Accompt* muſt alſo be diſcharged for ⅙ of the Intereſt, from this Time to the Time at which his Share was payable, becauſe this new Partner has either paid in his Share, or is now made Debtor for it, and the Intereſt for the Time which the Company allows him to make Payment.

7. If I order my Factor abroad to load a Cargo of Goods, which I did by Advice, and for the Uſe of the Company, I diſcharge or give Credit to my Factor in my Books, and in the Company's make *Voyage*, &c. *in Company* Debtor to *my particular Accompt* there.

8. If a Perſon who owes me in my private *Leger*, ſell Goods to the Company, or becomes their Creditor otherwiſe, if he and I agree that the one Debt diſcharge the other (for ſo much) I give him Credit in my Books, by *my Accompt in Company*, &c. and ſuppoſing he was already Creditor in the Company's Books, make him Debtor there to my particular Accompt.

9. If I buy Goods for the Company, or ſell them out of my private Effects, having no Money of theirs to pay them, or having given nothing of theirs for them; in my private Books *my Accompt*, &c. is Debtor for what I pay and give out of my Effects for the Company, or when perſonally engaged for; and in the Company's Books, the Goods are Debtor to *my particular Accompt*; but being paid out of their Effects, the Thing received is Debtor to the Thing delivered for the Value of what's delivered; or if the Seller give Credit to the Company, then the Goods are Debtor to him, in the Company's Books.

It were very idle to add any more, after ſo plain an Account as I have given of this Method in the Definition of the Uſes of the Accompts, where you ſee there is nothing to do after the Stocks are entred, that's any Way different from the recording of like Caſes in proper Trade, except as to the transferring between my private Concern and the Company, which has no Difficulty in it. You ſee the Deſign of *Book-keeping* diſtinctly anſwered, and eaſily, by the Scheme of Accompts propoſed; and I know of but one Objection, *viz.* that if I am any Time in the Company's Debt for my Stock. I have not directed how that ſhall appear in my private *Leger*, I anſwer, the Record made in the Company Books is enough for this, it needs not appear in my private Book till paid, and the Uſe of *my Accompt*, &c. in my private *Leger* is chiefly for keeping up the

Balance

Balance thereof, and I must have Recourse to the Company's Book to know distinctly the State of my Affairs with them; but to satisfie this Demand, you may erect another Accompt in your private *Leger*, and call it *Company*, No. I. (or what Distinction you please) and for my Stock owing, make it Creditor by the other Accompt, *viz. my Accompt with*, &c. and when I pay, make *Company, &c.* Debtor, and there is no more Use for it.

Now, whoever understands what's already delivered, will find it no Difficulty to make Application to any other Supposition, as when the Company's Affairs are committed to the Management of a neutral Person, in which Case every Partner keeps Accompts of his Concerns, much the same Way as when the Manager is a Partner; and for that neutral Person he is only as Factor to the Company, and may keep Accompts for the whole as one Person; or if he is required to keep each Partner's Concern distinct, he may easily do it, by considering the preceeding Instructions.

§ XVI. *Exchange in Company.*

This is a Kind of Trade, where two Persons living in different Places, remit to one another, certain Sums to be employed for both their Accompts, in mutual Exchange, *i. e.* they answer one the others Bills, the Gains made by the Exchange are equally divided, because the Stocks are so. This is in Effect a Kind of proper Trade, for both keep the same Kind of Records, for what they give out or receive, under the following Titles, *viz. A. B. at—— our Accompt of Exchange in Company*, which I make *Debtor* for all the Bills I remit to him, or he draws on me; it is *Creditor* for all he remits to me, or I draw on him. This Accompt must have an inner Column for the foreign Money of the Bills, and so the outer Columns of the Debtor Side shows what Money of my own Country I have given out, and the inner Column shows what Value of his Country Money, my Partner has received; on the Creditor Side it is contrary; and what's outer Column Debtor Side of my Book, is inner Column Creditor Side of my Partners, and my Inner, his outer Column of opposite Sides, the same Way.

Note 1. You may have use for another Accompt with your Correspondent, as *A. B. his particular or current Accompt*, in Case of other Dealing betwixt you, or in case his Bills are refused and protested, then this Accompt is *Debtor* for the Charges, and *Creditor* for Charges for my Bills prorested. *See more of the Use of this Accompt in the next Chapter.*

2. For Bills drawn at long Usance, some make use of *our Accompt on Time*, and when the Bills fall due, carry them from this to the other Accompt, but the first is sufficient to shew the whole State and Circumstance, by the Narration.

§ XVII. I shall shut up this Chapter with a very useful and general Instruction, which is, that when any Transaction is resolved into its *Debtors* and *Creditors*, if the Reason of what is done be demanded, the Answer is plainly, because by the

the Definition of the Uſe of theſe Accompts, they ought to contain ſuch Things on the *Debtor* and *Creditor-Side*. If it be further required to ſhew the Reaſonableneſs of that Definition, we anſwer that the End and Deſign of *Book-keeping* is perfectly obtained by theſe Accompts; which is either obvious at Sight, or we muſt ſhow it, by making appear, that from theſe Accompts we can find a ready diſtinct Anſwer to any Enquiry can be made about that Particular, and that it brings no falſe Charge on any Perſon; and thus we have the ultimate End of every Thing that is done in this excellent Method. A Learner may make good Uſe of this, for having reſolved any Tranſaction into it's *Debtors* and *Creditors*; to be aſſured that he is right, let him repeat to himſelf the Uſe of theſe Accompts, which he has made *Debtors* and *Creditors*, and compare the Circumſtances and Fact of the Tranſaction therewith, if they agree he is right.

What I have ſaid here, may be alſo uſeful in directing one to make arbitrary Schemes, for having duly conſidered the Nature and Circumſtance of the Buſineſs, to which you would apply this Method, and then laid down a certain Plan, and aſſign'd Uſes to every Accompt; you are to compare theſe with the End and Deſign of *Book-keeping*, and conſider the Effect they will have in the different Circumſtances of the Affair in Hand; and if the End is obtained, and not only ſo, but in the moſt diſtinct and eaſy Manner, then all is right.

CHAP. III.

Of the cloſing and ballancing of Accompts, and tranſporting the whole into a new Leger, *where, of correcting Errors found in the Books.*

The Deſign and Method of this artificial *Book-keeping*, has, I hope, ſo far as already explained, ſufficiently approven it ſelf, to thoſe at leaſt, who have carefully compared the Examples of the following practical Books, who have attentively conſidered the Uſe and mutual Dependence of the ſeveral Books for perfecting the Deſign, and particularly the Uſe of the Accompts in the *Leger*, as they have been deſcribed. The preceeding Chapters ſhow how regular Accompts are begun and carried on, and this ſhall ſhow how they are to be finiſhed.

It need not be again obſerved, that the *Waſte-Book* is the Ground Work of all, and the *Leger* the Top of the Building; for every Thing terminates and takes its laſt Form here: All other Books are of a middle Nature betwixt theſe two, and ſubſervient to them; but the chief of theſe is the *Journal*, where-

fore it is numbered with the other two, and makes up the three grand Books; in the due Use of which we obtain the End of *Book-keeping*, *viz.* to know the just and true State of our Affairs, and this especially from the *Leger-Book*, where Things are wrought into such a Form, as we may most readily find an Answer to any Demand about our Affairs, supposing that every Thing is already transported from the other Books into it.

But when we speak of the Enquiry to be made into the State of Affairs, we must distinguish. For 1*mo*, We may enquire into the State of some particular Branch, which is contained either in one single Accompt, such as the *proper Accompt* of any Person in common Dealing, whereby alone we know our mutual Debts, and consequently the Ballance; and an *Accompt of Goods* in proper domestick Trade, which shews how much of that Kind is purchased, and disposed of; and consequently what's on Hand and what's gained or lost by it: Or it may be contained in several Accompts that have a Connection and Dependence upon one another, as belonging to one particular Branch, such as the foreign Accompts with your Factor, which must all be examined to know how your Affairs, under his Direction, stand. Or 2*do*, We enquire into the total State of our Affairs, which is the chief Subject of this Chapter: And it is plain, this can only be known by examining the State of every particular Accompt, whereby we find the State of the whole. For the 1*st*, It is done at any Time, as Necessity or Fancy obliges you. When any Person, with whom you have Dealing, comes to adjust and clear Accompts, then must their Accompts be examined, to know how it stands betwixt you; and what's given or received for clearing the Accompt, must be stated according to the preceeding Rules; and if the Accompt be not cleared at this Time, yet because it has been adjusted, to prevent future Mistakes, it is fit to transport it to a new Space, or at least sum up the Sides, and against the Sum write the Date, and say *adjusted*; and then your next Reckoning begins from that, the preceeding Articles being adjusted: But if you enquire into the State of any particular Accompt, for mere Satisfaction to your own Mind, or answering some Demands which may arise in the Course of Trade, (as when any Body would buy of you a Parcel of Goods, and you examine the Accompt to know what you have, you touch not the Accompt, to write any Thing in the *Leger*) Thus the End of *Book-keeping* is daily obtained, in that easy and regular Knowledge, which you may always find from your Books concerning the State and Course of your Affairs. For the 2*d*, It is done as oft as a Merchant pleases, when he would know the State of his Stock, and this is commonly once a Year; and then also there may be a Transportation of the whole Accompts into new Books, that is, the present State of every particular Accompt being examined, from the Ballance of these we makea new Inventary of our Effects and Debts, (upon which Inventary the new Books are begun) and comparing this with the old Accompt of *Stock*, we know what Alterations have happened to it, whether we are in better, worse or the same Condition, and precisely what the Circumstances are.

BEFORE I deliver the Rules for performing this general Ballance, it is neceſſary to ſpeak of examining and comparing the Books, and correcting Errors, becauſe the Rules for ballancing ſuppoſe every Thing to be juſtly recorded, otherwiſe you may perform this laſt Work and loſe your Labour. And in the firſt Place, before this ballancing be attempted, it is neceſſary that all the ſubſidiary Books be examined, and their Contents tranſported into the grand Books, eſpecially the *Leger*, (becauſe it is from this Book that the Ballance I now ſpeak of is made) according to the Nature of the ſeveral Accompts to which they belong, as has been explained concerning ſome of this Kind in the preceeding Chap. § xiii. and even at other Times, when we enquire into ſome Particulars, it may be neceſſary to have Recourſe to theſe Books. Every Thing being duly filled up in the *Leger*, and no Error committed, we may proceed to find the Anſwer of this laſt and greateſt Demand, *viz.* what is the true State of our whole Affairs. But if there have been any Errors committed, as may very eaſily be, conſidering how humane Things are ſubject to failing, theſe we ought firſt to diſcover (if poſſible) and correct, by a careful peruſing and comparing the Books, beginning at the *Waſte*, and all it's Subſidiaries, comparing the *Journal* and *Waſte*, and then the *Leger* and *Journal*. I ſhall mention what theſe Errors may be, and how to correct them, for you muſt know there is an Art in correcting Errors when they are found, becauſe of the great Nicety required in keeping Accompts diſtinct and clear, ſo far, that if poſſible there muſt be no Blot or foul Writing in the Books, the *Leger* eſpecially. There may be Errors 1*mo*, In the total Omiſſion of ſome Tranſaction in all of the Books, and theſe perhaps you may never recover, and may bred enough of Trouble, againſt which there is no Remedy, but the greateſt Care and Exactneſs in writing down every Thing as it occurs; if you remember any Thing that has been forgot, let it be recorded in Form 2*do*, There may be Errors in the *Waſte-Book* and *Journal*, and other ſubſervient ones, by the miſ-naming of Perſons or Things, or in the Dates; theſe you'll diſcover by a careful reading over the Books, and may be corrected with your Pen, by the Help of a Penknife and Pounce: Tho' I muſt mind you here, how much ſome Merchants affect pure and fair Writing in their Books, they will not raze or cancel any Word or Sentence which they have written wrong, if they immediately perceive it, but write down the Right with a, *I ſay*, before it, thus, received, I ſay paid, *&c.* but if the Error was paſſed into the Book, and been diſcovered ſome Time after they muſt make the beſt they can of it another Way. 3*tio*, There are Errors, in the *Waſte-Book* and *Journal*, which may happen in letting down wrong Numbers of Money, or in the Quantity of Goods, and eſpecially in Calculations, making of States, or collecting Sums, theſe are to be found alſo by a careful peruſing the Books; and for correcting them, we muſt conſider whether theſe Accompts to which they belong are current, or ſtand open in the *Leger*, for then they may be corrected in the *Waſte* and *Journal*, either by the Pen, or by a new Poſt, mentioning the Diſcovery of ſuch an Error, and a Reference from the firſt Place to where the Correction ſtands; and then carrying it to the *Leger* in a new Article upon the Accompt to which it belongs: But if the

compt is already cloſed and finiſhed; as if the Error belongs to a Man's Accompt who has already cleared Accompts with me, and perhaps mutual Diſcharges paſſed, ſo that the Thing is beyond retriving; The Error affecting all the Accompts concerned in the *Leger*, will not hinder the Ballance thereof, and ſo need not be corrected, unleſs for private Satisfaction, and then you may erect an *Accompt of Errors*, and if the Error is Loſs, make *Accompt of Errors* Debtor to *Profit*, *&c.* and contralily, if it's Gain to you; but if the Thing is retriveable, it will correct upon the Accompts concerned. 4*to*, There may be Errors in the *Journal* by wrong *Debtors* and *Creditors*, or naming a Thing *Debtor* for *Creditor*, and contrarily. Let theſe be corrected with your Pen, or by Writing the Tranſaction Right in a new Place, with a Reference from the Place where it ſtood firſt.

Now, ſuppoſing you have gone over the *Waſte-Book*, and made every Thing right, and compared the *Journal* exactly with it, and adjuſted all Things here alſo; the laſt and moſt troubleſome Task will be the examining the *Leger*, which muſt be done with the greateſt Care and Exactneſs, in this Manner, *viz.* you muſt begin with the *Journal*, and go throw every Parcel in Order, and ſee that it be duly entred in the *Leger* upon the *Debtor* and *Creditor Accompt* mentioned in the *Journal*, for which you muſt take the Help of the *Leger Index*, or the Numbers marked on the *Journal Margin*, (as in the following *Books* you ſee marked and explained) and finding all right, you may ſet a Point before the Article in the *Leger Margin* in both *Debtor* and *Creditor Accompt*, as a Mark that ſuch Article is adjuſted and right, and make a Mark alſo, for the ſame End, on the *Journal Margin*. When you have thus gone over the whole *Journal*, if there are any ſuperfluous Entries in the *Leger*, they will appear by wanting the foreſaid adjuſting Mark; and this is what Merchants call pricking their *Books*. Next, for the Errors diſcovered in the *Leger*, and how to correct them. The Error may be. 1*ſt*, Some *Debtor* or *Creditor* quite omitted, therefore correct it by entering the Article where it ſhould be, and then point it. 2*d*, One Accompt may be made *Debtor* or *Creditor* inſtead of another, which will admit of two Varieties: 1. You find for Example, an Accompt made *Debtor*, as it ought to be, but going to the *Creditor Accompt*, you find not the Article, becauſe it is either forgot, or placed to a wrong Accompt. In both Caſes let it be made right by placing it to the true Accompt, and then correct it on the wrong Accompt, by entering upon the oppoſite Side thus, *for adjuſting an Error*, ——and ſet down the Sum. But, 2. If the Debtor is right as to the Sum, but in the Narration of the Article, the Creditor is wrong named, and yet carried to the true Accompt; you may correct that, by ſetting down the true Name after the falſe by Interlination, if you can do no better, or on the Margin; But if it is alſo carried to the wrong Accompt, beſides this you muſt alſo place it to the true Accompt, and balance the Error on the falſe Accompt, as already directed; or in this Caſe you may re-charge the Accompts thus, *viz.* charge the falſe Creditor, Debtor to the firſt Accompt where it is only wrong named on the Debtor Side, and thus both theſe are balanced for that Article, and then enter it right on the true Accompts, as ought to have been done at

firſt.

firſt. 3*tio*, If an Article is entered on the Debtor Side for the Creditor, or contrarily; correct it by entering double the Sum on the true Side, which will both balance the Error on the oppoſite Side, and ſet the true Sum in its Place, and write before it, *for adjuſting an Error*. 4*to*, If any Number or Sum is wrong, 'tis corrected by entering on the ſame Side with the Error what it's deficient, or on the oppoſite Side what it exceeds the right Sum; and if the ſame Error is in both the Debtor and Creditor Accompts, then the Stile of the Correction on both the Accompts, is *A.* Debtor to *B*, and *B* Creditor by *A*, *for correcting an Exceſs or Defect*; if 'tis only wrong on one of the Accompts, then only correct it there; if 'tis a Defect, write *A.* Debtor to, or Creditor by *B*, *for a Defect*, on the ſame Side with the Error; but if 'tis an Exceſs, write only upon the oppoſite Side, *for adjuſting an Exceſs on the oppoſite Side*, and ſet it down. If after the *Journal* is compared every Article with the *Leger*, and all pointed which are found or made right, the ſuperfluous Articles in this are to be corrected by ſetting the Error on the oppoſite Side, *for adjuſting*, &c. If there are Errors of any other Kind, I hope you'll be able to correct them without any more Inſtruction by what you ſee of the preceeding Caſes, ſo as to anſwer the Deſign, which is the making of the Accompts exactly true, and reſtoring the Balance of the Books where any Error has diſturbed it, and all this in the moſt clear and diſtinct Manner.

In the preceeding Parts I ſhowed, how from the Nature of this Debtor and Creditor Form, the *Leger* (every Thing being tranſported into it from the ſubſervient *Books*) has in it ſelf a perpetual Balance of Accompts, *i. e.* the Debts and Credits upon every Accompt being ſummed up, the Sum of all the Debts will be equal to the Sum of the Credits; (I mean the Money Columns) and therefore, a Trial ought to be made of the *Leger* this Way, and if it fail, tho' but in one Penny, ſuppoſing the Sums are perfectly well caſt up, that muſt not be neglected, becauſe you are not ſure, but there may be Errors of greater Value, which countring one another, have reduced the Effect into ſo ſmall a Sum. The Balance failing, even after you have examined and compared the *Books*, the Error is wraped, and poſſibly may never be found, which is a very unlucky Thing: But tho' that Balance hold, indeed there may be Errors, which being equal and oppoſite, will never appear but by a ſtrict Search into the *Books*; therefore the Examination and Compariſon of them cannot be diſpenſed with, whether the Balance be good or not. If after all your Pains the Balance fail, or when it is right, you ſuppoſe there may be Errors, as is poſſible, I know not how to help you for this Time, only for the future, let the greateſt Care be taken to prevent Errors along as the *Books* are filled up, by writing in them deliberately, and with exact Attention to every Thing. And it will be a good Rule, not to delay this Work of comparing and pricking the *Books*, till a general Balance; but at ſet Times, as once a Month, let it be carefully done; and ſo far is fixt at every Examination, which you know by the Points; and then you have not theſe Articles to adjuſt the next Time, therefore your Work at laſt will be very eaſy. The Search for, and correcting of Errors is the very Burden and Drudgery of Accompts, and if Things are done with an Impreſ-

ſion

ſion of this, you'll very probably keep out of them. Check Accompts have a very good Effect for diſcovering Errors; therefore, in great Buſineſs where the Managers can afford to have two Accomptants, each to keep *Books* for the ſame Affairs, Errors will more eaſily and certainly be diſcovered, by comparing theſe two Sets, ſince it is not probable they will both fall into the ſame Errors.

I return now to the Matter of cloſing and ballancing every particular Accompt in the *Leger*, in Order to draw from thence the true State of a Man's whole Affairs, *i. e.* To make an Inventary of his Eſtate and Debts.

By the ballancing of Accompts, you know, is meant the Equality of the Debt and Credit. And an Accompt is ſaid to be naturally ballanced, when in the Courſe of real Tranſactions, the two Sides come to be equal; otherwiſe there is an artificial balancing, to the Effect above-mentioned, which is that I have now upon Hand; this being done, the Accompts are ſaid to be cloſed, or ſhut up, that is, the two Sides being made equal in the Manner following, the Sums are under-written, and no more is to be placed on that Accompt, *viz.* in theſe Books, becauſe upon the Inventary to be made, a new Set is to begin.

The ſimple natural Rule for making up the Inventary demanded is this, *viz.* paſſing the Accompt of Stock and Profit, *&c.* you muſt go thro' every Accompt in the *Leger*, and conſidering diligently what is the Uſe or Contents of any Accompt, you'll find what that Accompt owes you, or what you owe it, *i. e.* what the neat Debt or Credit of any Perſon's Accompt is, and what Effects of any Kind remain in your Hands, or in the Hands of your Factors and Correſpondents, alſo what Articles ſtand upon imaginary Accompts, which may either prove effectual, for or againſt you; Theſe all being collected, it is plain you have a true Inventary of your Eſtate. But it is propoſed, not only to do this, it muſt be done in good Method, and ſo as, when it is done, the whole Accompts in the *Leger Book* be cloſed and balanced; in Order to which, it is very plain, there muſt not only be made a Collection of ſuch Articles as properly compoſe your Inventary of Eſtate and Debts, but from all theſe *Accompts* to which Gain or Loſs has happened, there muſt be a Collection made of the Articles gain'd or loſt, which have not been already carried to the *Accompt of Profit and Loſs*, both in Order to the compleat Balance and cloſing of the Accompts, (as you ſee the Neceſſity of by one Example, *viz.* if you ſold a Parcel of Goods at a greater Value, (which ſtands in the Creditor Side of the Accompt) than they coſt, (in the Debtor Side) this Difference hinders the Balance, and belongs to Profit and Loſs) and alſo that the neat Gain or Loſs upon the whole Accompts, being compared with the Encreaſe or Decreaſe of your Stock, you may have this further Proof that the *Accompts* have been right kept; becauſe, according to this Method, every Thing given and received, and all Tranſactions whatever, being duly recorded in Form, it is certain the Encreaſe or Decreaſe of your free Eſtate, as it is found by the Balance of the Accompts, muſt be exactly equal to the Balance of the *Accompt of Profit and Loſs*, *i. e.* the neat Gain or Loſs.

Now

Now, to perform this Work, there muſt be framed *an Accompt of Ballances*, upon which are collected, all the Articles that compoſe your Inventary, whether real or imaginary; thus, *viz.* on the *Debtor-Side*, it will contain all the Articles of your Eſtate, and on the *Creditor-Side* theſe of your Debts, brought here in the *Leger-Stile* from the ſeveral Accompts which owe you, or to which you owe; for it is evident, if any Accompt owes to me, it muſt want that Article on the *Creditor-Side*, elſe it could not owe me, and therefore it is cloſed by ſetting the Article *Owing* on the *Creditor-Side*, thus, *viz.* *Creditor* by Ballance, and conſequently Ballance *Debtor* in its Accompt; but if you owe to that Accompt, it is on the contrary cloſed *Debtor* to Ballance; which proves what I ſaid of the Accompt of Ballance. And for the Articles of Gain and Loſs, they are carried to the Accompt of *Profit* and *Loſs*, thus, every Accompt is *Debtor* to *Profit*, &c. for the Article gain'd upon it, and *Credit* by *Profit*, &c. for what is loſt. So far you have the general Rule for this ballancing, for the better applying whereof, I add this Obſervation, *viz.* That by the Nature of ſome Accompts, they will cloſe only with *Ballance*, *i. e.* the ſimple Difference of the two Sides is an Article of *Ballance*, or belongs to your Inventary, as being a Debt to, or by you: Such is every Man's *proper Accompt*. Others cloſe only with *Profit* and *Loſs*; and theſe are particular Accompts of *Profit*, &c. ſuch as *Intereſt-Accompts*, *Houſhold Expences*, *Charges of Merchandize*, &c. And laſtly, ſome will have Articles of either, or both Kinds; ſuch as an *Accompt of Goods*, where part is undiſpoſed of, and belongs to the *Accompt of Ballance*, for the value of which the Accompt is *Creditor* by Balance, after which the Difference is the Gain or Loſs on the Quantity diſpoſed of. I ſhould not wonder if any body were able from what's already explain'd concerning this ballancing, to finiſh it: ſuppoſing they underſtand and conſider well the Uſe and Contents of every Accompt. But to finiſh my Deſign compleatly, I ſhall be more particular, and teach you how to cloſe every particular Accompt in the *Leger*, which I have explained in the preceeding Chapter; (and then I hope you'll be ſenſible that the general Rule contains all, and therefore is ſufficient for any other Accompts, which may poſſibly be erected in a *Leger-Book*,) which I propoſe to do in this Manner, *viz.* To repeat in as few Words as poſſible, the Uſe and Contents of every Accompt, by which you'll have a Compend of the preceeding Inſtructions ſo far, and then ſhew how to cloſe it, the Senſe and Reaſon of which Part, you'll preſently ſee from the former compared with the Signification and Uſe of the Accompt of *Ballance* and *Profit*, &c. already explained. Now to the Thing propoſed.

In proper Domeſtick Accompts.

1*ſt*, EVERY *Perſons Accompt* ſhews on the *Debitor-Side* what he owes, and is accomptable for to me, and on the *Creditor-Side* what I owe, and am accomptable to him for: Therefore the Difference is the neat Debt betwixt us, which ſet upon the leaſt Side (which may be either of the Sides) and make it *Debtor*

to

to, or *Creditor* by *Ballance*, and carry it to the oppoſite Side of the Accompt of Ballance.

Note, 1. That you may have an exact Accompt of your Affairs, it is neceſſary to take notice of the Circumſtance of the Articles, particularly as to the Terms of Payment; and if the Ballance be a Part of ſeveral Articles due at different Times, you muſt either narrate them in your new Inventary, or refer to the old Accompt. But in ſome Caſes it will be neceſſary to make a double Ballance, that is, when there happens to be Articles of *Debt* and *Credit* upon various Dealing, which you would not have confuſed. For Example, a Man owes me a Sum upon Bond, which I keep diſtinct from other common Articles betwixt us, therefore I make the *Accompt Creditor* by Ballance for that, and what elſe he owes me; but if I am, by the Ballance of the other Articles in his Debt, then I make the Accompt *Debtor* to *Ballance* for that, and this will be uſeful when any Perſon owes, or you owe them upon accompt of another, [in Factorage.] See Mr. *Andrew Hunter*'s Accompt in the *Leger*, No. 2.

2. Take care to obſerve, if any bygone Intereſt upon Money lent, is due at this Time, and let it be charged to the Accompt, and carried to *Profit*, &c. then proceed to the Ballance.

2*d*, ACCOMPT *of accepted Bills*, or *Aſſignations*, are like Men's Accompts, for they repreſent ſundry Perſons, and are cloſed *Creditor* by *Ballance* for what Articles I owe, and *Debtor* to *Ballance* for what are owing me. Here it will be fit in making the Inventary, to mention particularly the Sums, and the Perſons who are *Debtors* or *Creditors*; tho' in the Accompt in the new Book, it may paſs in one general Article referring to the Particulars in the Inventary.

3*d*, CASH-*Accompt* ſhows on the *Debtor-Side* what Money I had received, and on the *Creditor-Side* what I gave out; the Difference therefore belongs to the *Accompt of Ballance*, being ſo much in Hand, and muſt neceſſarily fall on the *Creditor-Side*, ſince I cannot give out more than I received.

4*th*, AN *Accompt of Goods* ſhews on the *Debtor-Side* the Quantity purchaſed, with the Coſt and Charges; on the *Creditor-Side* how it is diſpoſed of; therefore if none of it is diſpoſed, the *Creditor-Side* is empty and muſt be cloſed *Creditor by Ballance* for the total of the other Side. 2. If it is all diſpoſed of, the Difference goes to *Profit*, &c. *viz. Debtor* to *Profit*, &c. if Gain, and *Creditor* by *Profit*, &c. if Loſs, as is evident. 3. If part is diſpoſed, and part not, (which the Quantity Columns will ſhew) calculate the Value of the remaining Part, which in true Proportion is, as the Sum of the Money of the *Debtor-Side* to the total Quantity, (tho' indeed it is arbitrary at what Value you ſtate it,) for this make the Accompt *Creditor* by *Ballance*, after which the Difference muſt go to *Profit* and *Loſs*, being upon the Part diſpoſed.

Note, IF it is a general Accompt, which has ſeveral Species, it will coſt you ſome Pains to calculate the Value of the remaining Goods: For to be exact you muſt conſider the firſt Coſt of each Species, and the Proportion of what Charges are ſtated to the Accompt.

If the Goods are all disposed, and there is inlack, see what is said at § VI. *Chap.* II. *Note* 4.

5th, Accompts *of Houses*, and of *Ships*, shews on the *Debtor-Side* the first Cost, and subsequent incidental Charges, such as Reparations, &c. on the *Creditor-Side*, if the same is sold, and at what Price, also what it has produced, as Rents, Freights; if the Thing is sold, it is closed with *Profit*, &c. otherwise it is *Creditor by Ballance* for the first Cost, after which close it with *Profit*, &c. for the remaining Difference.

6th, Delivery-*Accompt of buying and of selling* represent Goods bought and sold, but not immediately delivered, the first shews on the *Debtor-Side*, and the other on the *Creditor-Side* what Goods I had thus bought or sold, and on the opposite Side they shew what are delivered or not to be expected, for which Articles therefore the Accompt is already ballanced, consequently the Difference is always these Articles, not yet, but which are to be delivered, and so the Accompt must be closed on the Least-Side (which is the *Creditor* in the first, and *Debtor* in the second Accompt always) with *Ballance*, for the whole Difference. And in making the Inventary, mention the Articles distinctly, *viz.* The several Quantities and Persons, and Time of Delivery.

7th, Bottomry-*Accompt*, if you use it as I have done in the following Books, and also explained it § XI. *Chap.* II. towards the End of *Case* 1. then it shews on the *Debtor-Side* what Sums I lent on *Bottomry*, with the Interest, and on the *Creditor-Side* the Event of the Voyage; for these Ships that are arriv'd or lost, the Accompt is already ballanced, therefore the Difference is always what is owing on the Ships supposed to be safe, and for which the Accompt must be *Creditor by Ballance*, (for you see it cannot fall on the *Debtor-Side*;) and be particular in your Inventary to mention the several Ships and their Articles. If you use this Accompt as a mere Accompt of *Profit*, &c. then close it with *Profit*, &c. and if you use the *Accompt of Borrowers on Bottomry*, it closes also with *Ballance*.

8th, Wagers-*Accompt* shews on the *Debtor-Side* what Wagers I'm engaged in, and on the *Creditor-Side* what are determined; therefore for these undecided, there is nothing on the *Creditor-Side*, and so make the *Accompt Creditor by Ballance*, for the Sum of such Articles; after which the Difference belongs to *Profit*, &c. but in that extraordinary Case, where I supposed Money consigned in my own Hands in a Wager against me, if such Wager is not decided, make the Accompt *Debtor* to *Ballance* for it, (because it was *Creditor* for the Consignation,) and let this be done before you close with *Profit*, &c.

9th, Hazard-*Accompt* shews on the *Debtor-Side*, what I'm engaged for upon Parole in Wagers, and on the *Debtor-Side*, what are decided; therefore the Difference is always the Value of what are undecided, for which the Accompt must be closed *Debtor* to *Ballance*, and this will counter the equivalent Sum brought from the *Wagers-Accompt*.

10th, Promise-*Accompt* shows on the *Debtor-Side* what I have promised conditionally, and on the *Creditor-Side* what is promised to me: Besides, on the *Debtor-Side* it shews, what of the Promises made to me are fulfilled, or not to be expected; and on the *Creditor-Side* what of my Promises are fulfilled, or not to

be expected; therefore for these Articles, where the Performance is past, or not expected, the Accompt is already ballanced; consequently you are to make it *Creditor* by *Ballance* for my Promises not yet extinguished, and *Debtor* to *Ballance* for the Promises made to me, not extinguished.

11th, CONDITIONAL-*Accompt* shews on the *Creditor-Side*, the very same Thing in effect, which the *Promise-Accompt* shews on the *Debtor-Side*, and on the *Debtor-Side* what it does on the *Creditor-Side*, because I never make these *Debtor* or *Creditor*, but to and by one another, therefore make it *Debtor* to *Ballance*, for these Articles on the *Creditor-Side*, not extinguished; and *Creditor by Ballance*, for what on the *Debtor-Side* are not finished.

12th, ALL *Accompts* which are mere *Profit and Loss*, such as *Insurance-Accompt*, *House* and *Personal Expences*, *Charges of Merchandize*, &c. are closed with *Profit*, &c. for their Difference, which never can signify any other Thing.

13th, ACCOMPT *of Charges* also of *Houshold Expences Out-standing*, are properly *Personal-Accompts*, and to be closed with *Ballance*; which from the Nature of these Accompts, can never fall but on the *Creditor-Side*, *i. e.* the *Creditor-Side* is always least, if there is any Difference.

Proper Foreign Accompts.

1st, VOYAGE to ——— &c. shews on the *Debtor-Side* what Goods I have at Sea, and the value of the Cargo; and on the *Creditor-Side* the Event of the Voyage. If the *Creditor-Side* is blank, it is closed by *Ballance*, which shews what Effects I have at Sea, otherwise it must closed with *Profit*, &c. if there is any Difference.

2d, *A. B.* Factor at ———, *my Accompt of Goods*, being of the same Nature, close also the same way, as an *Accompt of Goods Domestick*, of which already.

3d, *A. B.* —— *my Accompt current*, shews on the *Debtor-Side*, what real Debts he owes me, and on the *Creditor-Side*, what I owe him. But it is by the foreign Money this Accompt must be cleared, therefore, see first what the Ballance of that Coin is, if there is any, and calculate the Value thereof in *English* Money at the current Exchange, and make the Accompt *Creditor* by *Ballance* for the same, setting down both in their Columns. The inner Columns being found, or now made equal, the difference of the utter Columns is Gain or Loss upon Exchange, for which therefore close the Accompt with *Profit*, &c. This is the exact way of making this Ballance, but in case foreign and *English* Money Columns are both unequal, and the same Side of both least, you may set the Ballance of the one against that of the other, it closes the Accompt well enough, tho' it shews not the exact State of Things, since the Ballance of *English* Money may happen to be greater or less than the true Value of the foreign Ballance. I have used both Ways in the following Books.

4th, *A. B. my Accompt of Sales*, shews on the *Debtor-Side*, what Debts are owing for my Goods sold by him, and on the *Creditor-Side*, what he has received Payment of; you must close it the same way as the former; which has only this Difference, that the Ballance always falls on the *Creditor-Side*, being for the

the out-ſtanding Debts; and if there is any Difference after this, it is what is gained or loſt on Exchange, for theſe Debts which my Factor remitted with the Advice that he had received them; otherwiſe the Accompt ſtands equal for the Debts that he has received, which were carried into *my Accompt current*, where the Gain or Loſs by Exchange will appear.

THUS you'll find the true State of Affairs under your Factor's Direction, as far as his Advices already received allow you to know.

Factorage-Accompts.

IN Order to a general Balance, theſe muſt alſo be cloſed and tranſported, 1*ſt*, *A. B. his Accompt of Goods* —— ſhews on the *Debtor-Side* what his Goods owe me for Charges and Proviſion, *&c.* (which muſt all be filled up and charged at this Time.) On the *Creditor-ſide*, how they are diſpoſed of: And now conſider if any Sales were made for ready Money, which have not been already tranſported from this Accompt to *his Accompt current*, and tranſport ſuch Articles at this Time, *viz.* Make this Accompt *Debtor* to the other for theſe Sums, having firſt deducted what Articles are owing to you not already deducted; after which cloſe the Accompt with *Ballance*, for the Difference, if there is any, which will be Debts owing to your Imployer, conditionally indeed by you (if not inſured, for then I would carry the whole Ballance of this Accompt into the other) but for which the Buyers, or ſome other Accompt, ſtands *Debtor* in your Books, and ſo the neat Ballance of your Inventary will be the ſame thing as it wanted both; and I have ſpoken already how theſe Debts are to be managed in ballancing theſe Perſons Accompts, or the Ballance may be what the Accompt owes you, as if there is no Sale made, or not as much as the Charge on the *Debtor-Side*.

THE *Foreign-Accompts* for my Imployer are to be alſo cloſed thus, *viz.* Carry the Gain or Loſs into his *Accompt current*, and then cloſe the Accompts with *Ballance*, the Effect of which will be, to bring Articles into your *Stock-Accompt*, which are not properly yours; but it brings equal Articles into both Sides, ſo there is no Error in effect, and the Narration will diſtinguiſh theſe Articles.

2*d*, *A. B. his Accompt current* —— is cloſed with *Ballance* like any other Man's Accompt.

Note, IT will do well if at this Time you ſend your Imployer a Copy of his Accompts in the State you have cloſed them.

YOU may alſo chuſe to cloſe all theſe Accompts by a double Ballance, *viz.* Make them *Creditor* by *Ballance* for the Sum of the *Debtor-Side*, and *Debtor* to *Ballance* for the Sum of the *Creditor-Side*, and then you bring them into your new Books in the ſame State they were in at cloſing the old, becauſe you may perhaps think it more proper to leave ſo particular a cloſing of theſe Accompts till you adjuſt and clear with your Imployer.

YOUR Imployers Goods remaining in your Hands, have nothing to do with the Ballance of your Books, and you have only to Note them, that they may be ſet down upon the Accompt in the new *Leger*.

Company-Accompts.

Branch 1. When I am a ſimple Partner, ſome other being Manager and Book-keeper. If the *Company-Accompts* have been already cleared with the Manager, ſo that they are finiſhed, then *my Accompt with* —— &c. muſt in that Caſe be cloſed with *Profit*, &c. for the Difference which is the Gain or Loſs by the Partnerſhip: But if the Company's Accompts are ſtill current, cloſe this Accompt with a double *Ballance*, *i. e. Creditor* by *Ballance* for the Sum of the *Debtor-Side*, and *Debtor* to *Ballance* for the Sum of the *Creditor-Side*, and thus it will come in to the new *Leger* in the ſame State, with this Difference, that you have total Sums for the Tranſactions paſt, and upon Occaſion muſt therefore have recourſe to the old *Leger* for Particulars. Another Thing to be noticed, is, That the Gain or Loſs made upon this Partnerſhip, is not diſtinguiſhed, becauſe we ſuppoſe the Company's Affairs ſtill in motion, and not cloſed. So far the whole State of your Affairs will not appear.

If it is a fix'd Company, which is ſtill in Being, let this Accompt be cloſed *Debtor* to *Ballance* for my Stock, and then cloſed with *Profit*, &c. if there is any other Difference.

What other Accompts the Partners have, are cloſed like other Mens.

Branch 2. When I am Partner and Manager. If the Company is unfixt, and their Accompts kept in my Books, then, at making up this general Ballance of my proper Affairs, I muſt alſo cloſe up the Company's Accompts, elſe my *Leger* will not Ballance, becauſe I have Concern in theſe. If the Company's Acompts are ſtill open and current, my Book will come to a Ballance by cloſing all the Accompts belonging to the Company with a double *Ballance*; but, as in the former Branch, this will not ſhow the preciſe State of my Concerns, becauſe the Gain or Loſs is not diſtinguiſhed to every Partner; and therefore I may chuſe to cloſe theſe Accompts in the ſame Manner, as if I were required by the Partner to cloſe them, in order to their knowing the preſent State of their Affairs under my Management, which is to be done thus,

1. I charge the Goods in Company *Debtor*, or if there are ſeveral real *Accompts* belonging to the Company, I charge *Profit*, &c. in Company *Debtor* to *Profit*, &c. [proper] for the Proviſion owing me, on the bypaſt Negotiations. Some would alſo charge every Partners *proper Accompt Debtor* to this Accompt in Company for his Share thereof, which is altogether needleſs. It only appears neceſſary in this Caſe, *viz.* If the Company's Effects ſhould happen to be all loſt, yet the Partners are chargeable for your Proviſion, which therefore ought to be placed to their *proper Accompts*; but having done as I have here directed, if ſuch a Misfortune happen, you may mind this, and again charge their *proper Accompts Debtor* to *Profit*, &c. for their Shares, but do as you

pleaſe in this; take the ſame Method with petty Charges owing at this Time not formerly ſtated.

2. After this, go thro' all the *Accompts Domeſtick* and *Foreign* belonging to the Company, and cloſe them with *Ballance* and *Profit*, &c. the ſame Way as they were all for your *proper Accompt*, only for the Articles of Gain, &c. uſe the *Accompt Profit*, &c. *in Company*.

3. When you have thus gotten all the Articles of Gain and Loſs belonging to the Company, collected together, take the neat Gain or Loſs, and make a *Dividend* of it among the Partners, and cloſe the Accompt *Profit*, &c. *in Company* thus, *viz. Debtor* to, or *Creditor* by each Partners Accompt in Company for his Share, and *Profit*, &c. [proper] for my Share.

Note, If there is but one Accompt of Goods, you may make a *Dividend* of the Gain and Loſs, and carry it from that Accompt to the Partners Accompts, unleſs upon another Occaſion, you had already opened an Accompt of *Profit*, &c. *in Company*.

4. The Partners proper Accompts you may cloſe with Balance as other perſonal Accompts; but their *Accompts* in Company it will be beſt to cloſe with a double Balance, becauſe they are Accompts of a Truſt, which I ſuppoſe not yet finiſhed.

Note, The Conſequence of cloſing the *Company's Accompts* with Balance, will be this, it will make Effects which belong partly to others and to you, come into your Inventary as if all were your own; but for your Partners Shares, there are equivalent Articles, which will come in among your Debts from their Accompts in Company; and therefore your neat Stock, which is the Difference of the *Debtor* and *Creditor* Sides of Balance, is ſtill the ſame it would be without theſe; and if any Body is Creditor upon the Company's Accompt, the Partners proper Accompts ſtand Debtor for their Shares, and theſe balance one another for the ſaid Shares.

If you ſuppoſe that the Partners have actually demanded the State of their Accompts at this Time, you ought to give them a fair Copy of the ſame, cloſed, in the Manner directed, upon that ſeparate Copy, but not yet touched in your *Leger*, till you ſee what's reſolved about their Affairs. What they receive from you to Accompt of their Concerns, charge to the *Accompts* by the former *Inſtructions*, and if the Company diſſolve, and they withdraw their whole Effects, then after all Things are duly ſtated, the whole Accompts will balance naturally, except perhaps their proper Accompts, becauſe you or they may remain in ſome real Debt to one another, unleſs alſo cleared at this Time. If the Society break not up, then the Accompts will ſtand open as they were, except ſo far as the collecting the Articles of Gain and Loſs into the *Accompt of Profit*, &c. alſo the Diviſion, and cloſing of that, and the ſtating of what is given or received, makes a Difference.

When

When the Companys Accompts are kept in ſeparate Books.

At making up the general Balance of my proper Affairs, I cloſe that Accompt, *viz. my Accompt with*, &c. as directed under the firſt Branch, and my *Leger* will come to a Balance, becauſe every Thing paſſed betwixt my private Concerns and the Company is duly ſet down on this Accompt, whoſe chief Uſe is the preſerving the Balance of my private *Leger*. But as I ſaid upon the firſt Branch, the true and compleat State of my Affairs will not appear, unleſs the Company's Accompt are already finiſhed; yet I may ſatisfie my ſelf in this, by making a State of the Company's Affairs upon ſeparate Papers, thus, going thro' all the Accompts, I collect the Articles of Gain and Loſs in the Manner already mentioned, and charging the *Accompt Profit*, &c. *in Company* for my Proviſion, the neat Gains being divided according to every Partner's Share, and my Part added to the Creditor Side of my Accompt in Company, the Balance of it will ſhow the true Value of my Concerns in the Company, according to the preſent State of their Accompts.

If the Company demand the State of their Affairs, their *Leger* preſents them with that, but firſt do this, *viz.* Go thro' all the Accompts, and collect the Artticles gained or loſt into the *Accompt of Profit*, &c. *in Company*, then charging *Profit*, &c. Debtor to your particular Accompt for your Proviſion, make a Dividend of the neat Gain, and cloſe the Accompt Debtor to, or Creditor by each Partners and your own *Accompts in Company*. If the Society break up, the Accompts will be entirely finiſhed at this Time in the *Leger*, becauſe there will be a Dividend of the remaining Effects of the Company's; the Debts owing to the Company will be alſo aſſigned to the Partners; and for theſe owing by the Company upon their Credit, there will be Order taken for the Payment of them: When all this is done, your own Share which returns to your private Accompts, is to be transferred there in the Manner already inſtructed. Every Thing that can occur here, you'll ſoon find how to order, by diligently conſidering the Matter in Hand, and the Nature of each Accompt, and ſo I leave you to make what Caſes you pleaſe, and anſwer them when you have done. And if you would have an Abſtract of the State of the Company's Affairs, then upon a ſeparate Paper make an Accompt of *Balances*, and bring here from every Accompt in the *Leger* what Articles belong properly to ſuch an Accompt, (the Articles of Gain and Loſs are already ſpoken of) but touch not the Accompts to write any Thing in the *Leger*, till you ſee what they do about their Affairs; when this is done, the Balance Accompt will be equal of both Sides, for the Debtor Side contains all the remaining Effects, and Debts owing to the Company by the Partners as well as others; and on the Creditor Side, what the Company owes particularly to the Partners for their Shares; and the neat Gain or Loſs being already added to their Accompts, and conſequently now brought to the *Balance Accompt*, this muſt be equal, becauſe there is nothing in the Nature of the Thing to make any Inequality, but the neat

Gain

Gain or Loſs not being added. But if the Society continue, their Accompts will ſtand open, unleſs you propoſe to cloſe them in the Spaces where they now ſtand, and tranſport them to new ones, and then cloſe them with Balance; and to enter them in the new Spaces, you have nothing to ſay, but *Debtor to, or Creditor by Balance, (tranſported from the former Accompt)* and tho' the Word *Balance* is mentioned, yet it is the old and new Accompt that are properly the reciprocal Debtors and Creditors for that Article of Balance, but you may put in that *Balance Accompt* in the Book betwixt the two Set of Accompts, and it will equally reſpect them both, and be as it were the capital Accompt, whence the new Set flow, which make in a Manner a new *Leger*, in the ſame Manner as you'll find below the Balance Accompt of my private Affairs to ſtand betwixt the Accompts of the old *Leger*, and the Stock Accompt of the New.

If the *Leger* of a ſtanding Company is propoſed to be balanced; as to the collecting the Gain and Loſs, and making the Dividend, it is done the ſame Way as in the former Caſe: And if you would tranſport the *Accompts* into new *Books*, cloſe them all with an *Accompt of Balance* (in Company). But if this Balancing be made upon the Company's Demand, let the Articles of Balance be collected in a ſeparate Paper, and touch not the *Accompts*; then, if the Partners retire their Shares of the neat Gain, make their *Accompts in Company* Debtors to the Things given, thus their *Accompts in Company* will remain Creditor for no more than the firſt Stock.

If they leave any of the Gain for augmenting their Stock, it will remain upon the Credit of the *Accompt*. If there be Loſs upon the *Accompts*, their Stocks will be diminiſhed, which if they make up, or if they add any Thing elſe to the Stock, then *Caſh* is Debtor to their *Accompts in Company* for what they add, or their *proper Accompts* Debtor, if 'tis not preſently paid in. After all this is over, you may proceed to cloſe the *Accompts* with *Balance*, and then the *Balance Accompt* will be equal of both Sides, for the Reaſons ſhown in the former Caſe; and its Articles compoſe the *Stock Accompt* for the new *Books*: The Debtor Side is what is owing to the *Company*, either of Effects remaining, or Debts, whether by the Partners or others; the Creditor Side is the Debts owing by the Company to their Partners or others. But obſerve, the *Stock Accompt* made from this Balance, will contain other Things than the *Stock Accompt* made at the Beginning of this Partnerſhip, becauſe there may now be ſeveral Articles owing to the Partners upon their *proper Accompts*, or to other Perſons who deal with the Company, yet ſtill the new *Accompt of Stock* is equal of both Sides, as the former was, becauſe it is the tranſcript of the fore-mentioned *Balance Accompt*, which is equal; and to know upon this *Accompt* what the *Stock* is, you muſt conſider the Articles for which it is Debtor to the Partners *Accompts in Company*, for theſe contain the *Stock* of the Company.

Exchange in Company.

If the *Accompt* is ſtill current betwixt you, *our Accompt of Exchange* ought at this Time to be cloſed with a double Balance: But if you would cloſe it the ſame

same Way, as if the Correſpondence were now finiſhed or Content, or at leaſt as if the State of the Accompt were to be given up; then you may do it by the following Inſtruction; but firſt I put you in mind, that the *Accompt* is Debtor for all that I have given out and my Correſpondent received, and Creditor for what he gave out and I received; the inner Columns ſhows the Money of his Country, and the outer Column the Money of my Country given out and received. The Variety of the following Inſtruction depends therefore upon the Equality or Inequality of the outer and inner Columns.

1. If the inner Columns are equal, my Correſpondent owes me nothing, for he has given out as much as he has received; and what Difference there is of the outer Columns, (*i. e.* of the Money given out or received by me) is ſo much Gain or Loſs on Exchange, the half whereof belongs to my Correſpondent; therefore I cloſe the *Accompt Debtor* to *Profit* and *Loſs* (proper) for my Half, and to my Correſpondent's *Accompt current* for his Half.

2. My Correſpondents *Books* ſhow juſt oppoſite to mine, and I ſhall now ſuppoſe my *Books* to ſhow what his would do in the laſt Caſe, *viz.* that the outer Columns are equal, ſo that I have given out as much as I received, and there is nothing in my Hands; and the inner unequal, ſo that he has either received more or leſs than he gave out; the Difference is Gain or Loſs, whereof Half is mine. If he has received more than he gave out, (*i. e.* if the Debtor Side is greateſt) I make *his Accompt current* Debtor to *Profit and Loſs*, &c. (proper) for my Half at the current Rate of Exchange; but contrary if it is Loſs, this makes all right, and yet the *Accompt* of Exchange is not touched. but let it be required to balance it ſo as to make the inner Columns equal; I ſhall ſuppoſe the *Debtor Side* is greateſt, and I make *his Accompt current* Debtor to *our Accompt of Exchange* for the total Difference of foreign Coin, againſt which ſet its Value at the current Rate; but becauſe he owes me only the Half thereof, I make *our Accompt of Exchange* Debtor to *his Accompt current* for the Half of the Value, ſetting no foreign Coin againſt it at the *Accompt of Exchange*, but at *his Accompt current*, (which diſcharges him) and to *Profit* and *Loſs*, for my Half. If the *Creditor Side* is leaſt, do juſt contrarily, and thus all is balanced, and the Effect the ſame.

3. If both outer and inner Columns are unequal, whatever Way the Inequality lyes, I may chuſe to balance the Accompts two Ways. 1. Either bring the inner Columns firſt to a Balance, by making it Debtor to, or Creditor by *his Accompt current* for the Difference of foreign Coin, againſt which ſet the Value at the current Rate, and then bring the Outer to a Balance by *Caſe* 1. Or, 2. Begin with the outer Columns thus, I make the leaſt Side *Debtor* to, or *Creditor* by *his Accompt current* for the Difference, with which ſet down a Number of foreign Coin equal to it at the current Value, then the outer Columns being equal, do the reſt by either Part of the Direction in *Caſe* 2.

My Correſpondent's *Accompt current*, is cloſed with Balance like any other Man's.

CON-

Waste-Book N°. I.

EDINBURGH MAY 1st, 1717.

The INVENTARY *(taken this Day) of the whole Estate, and Debts owing to me* A. M. *Merchant in* Edinburgh, *is as follows,* VIZ.

		l.	*s.*	*d.*
IMPR. I have of ready Money in Hand, the Sum of	:	800		
Item, I have 5 Tons of Claret Wine, at 8 *l. per* Hogshead, is		160		
Item, I have 18 Hogsheads *Virginia* Tobacco; neat Weight of each *Hhd.* is 600 *Pd.* cost me	: : : :	208	8	
Item, I have 30 Barrels of Raisens, at 1 *l.* 12 *s. per* Barrel,	:	48		
Item, I have 14 Pieces of broad Cloth, containing 19 Yards each, at 16 *s. per* Yard, in all	: : : :	212	16	
There is owing me by several Persons as follows,				
By Mr. *William Wallace* by Bond, dated 1st *February* last, payable at *Martimass* next, principal Sum	: : 100			
Interest owing at the Term of Payment, at 5 *per Cent.*	3 15			
	103 15	103	15	
By Mr. *Andrew Hunter,* as the Balance of an Accompt adjusted betwixt us, payable on Demand,	: :	80		
By Mr. *Andrew Cochran* on Demand,	: :	140		
My Moveables and Housheld-Furniture is at present worth	:	200		

I am owing to sundry Persons, as follows,				
To Mr. *David Johnston* payable 1st *November* next,	:	120		
Item, To Mr. *James Trustwell, per* Accompt	: :	60		
Item, I am owing to the Custom-House of *Leith,* as the Duty upon the foresaid Wine, payable 1st *October* next,	: :	40		

	l.	s.	d.
Item, I am due to Mr. *Thomas Richman* for 1 Years Rent of the House presently posseſſed by me, commencing from *Martimaſs* laſt,	15		
Item, Owing to Mr. *Andrew Cooper* 1 Years Rent of his Cellars in *Leith*, poſſeſſed by me, commencing from *Martimaſs* laſt. : :	10		

Follows the daily Tranſactions of my Trade.

Edinburgh May 2d, 1717.

Sold and delivered to *Alexander Paygood*, 7 Hhd. Claret Wine, at 12 *l. per* Hhd. for ready Money received, is : : 84

Sold and delivered to *William Smith* 2 Pieces of broad Cloth meaſuring 19 Yards each, at 17 *s.* 6 *d. per* Yard payable in 2 Months 33 5

Ditto 4th,

Bought and received from *Peter Chapman* 18 Bales of *French* Paper at 4 *l. per* Bale, payable in 1 Month, is : : 72

Ditto 6th,

Sold and delivered to Mr. *John Paton* Bookſeller in *Edinburgh*, 5 Bale of *French Paper* at 5 *l. per* Bale, which amounts to 25 *l.* on the Conditions following, *viz.*

	l.	s.	d.
Received in ready Money : :	10		
The Remainder payable in 20 Days by his Bill	15		
	25		25

Bought and received from *David Watſon* 32 Casks of Brandy at 3 *l. per* Cask, amounting to 96 *l.* as follows, *viz.*

	l.	s.	d.
Paid in ready Money : :	16		
Given in a Bill upon Mr. *Andrew Hunter* :	80		
	96		96

Ditto 7th,

Sold and delivered to *Elias Freeman* 3 Hhds. Claret Wine, at 12 *l.* 10 *s. per* Hhd. in all 37 *l.* 10 *s.* for which I have an accepted Bill on Mr. *Daniel Trader*, payable on Demand : : : 37 10

Ditto 8th,

Sold and delivered to Mr. *John Houſton* 10 Barrels of Raiſens, at 2 *l. per* Barrel; in all 20 *l.* as follows, *viz.*

	l.	s.	d.
Received ready Money : : :	8		
An accepted Bill on Mr *John Hutcheſon* payable in 10 Days.	6		
The Remainder payable by him in 2 Month :	6		
	20		20

Edinburgh

Edinburgh May 8th, 1717.

	l.	s.	d.
Bought and receiv'd from Mr. *John Ferguſon* 24 Casks of Brandy, at 2 *l.* 10 *s. per* Cask, paid in ready Money. : :	60		
Bought and received from *Alexander Black* 1000 Stone Weight of Iron, at 3 *s. per* Stone; in all 150 *l.* in the manner following, *viz.*			
Given him by Bill upon Mr. *Andrew Cochran*, payable on Demand. : : — *l.* 100			
The Remainder payable by me in 3 Months. 50			
150	150		
Ditto 11th,			
Sold and delivered in Barter with *Thomas Jameſon* 6 Pieces of broad Cloath, containing 19 Yards each, at 17 *s.* 4 *d. per* Yard, in all 98 *l.* 16 *s.*			
Viz. received 300 Yards of Holland, at 4 *s. per* Yard is, *l.* 60			
Received in ready Money 38 16			
98 16	98	16	
Sold and delivered in Barter with *Robert White* 15 Barrels of Raiſens, at 1 *l.* 16 *s. per* Barrel, in all 27 *l.* for which I have received 12 Barrel of Salmond, at 2 *l.* 5 *s. per* Barrel. : : :	27		
Sold and delivered to *Abraham Fairholm* 100 Yards Holland payable in 5 Month, at 5 *s.* 3 *d. per* Yard. : : :	26	5	
Ditto 14th,			
Bought and received from Mr. *James Montgomery* 14 Laſt of Herrings, well cured with *Spaniſh* Salt, at 15 *s. per* Barrel, is in all 126 *l.* on theſe Conditions, *viz.* : : — *l.* *s.* *s.*			
Paid him ready Money : : 60			
Given, a Bill on Mr. *Andrew Cochran* 40			
The Remainder, payable by me on Demand 26			
126	126		
Sold to a Stranger for ready Money 3 Hhds. Tobacco, at 4 *l.* 14 *s. per* Hhd. in all, : : : : :	14	2	
Ditto 20th.			
Delivered this Day in Barter 2 Hhds Tobacco at 4 *l. per* Hhd. is 8 *l.* for which I have received, *viz.* — *l.* *s.* *d.*			
In Money : : : 2			
Item, 4 Barrel of Figs at 1 *l.* 10 *s. per* Barrel, is 6			
8	8		
The 4 Barrel of Figs I have immediately ſold and delivered to *John Houſton* at 1 *l.* 18 *s.* payable on demand. 7 12	7	12	

	l.	s.	d.
Bartered with *Ninian Nicolſon* 200 Stone of Iron, for 3 *s.* 6 *d.* *per* Stone, is 35 *l.* which I have inſtantly delivered, and 15 *l.* Overplus, for which I received 750 Yards Linnen Cloath, valued at 16 *d.* *per* Yard, in all Worth.	50		
Ditto 24th,			
Paid in ready Money to *James Truſtwell*, what I owed him.	60		
Received in ready Money from *Daniel Trader* in Part of what he owes.	20		
Ditto 28th,			
Received this Day from *John Paton*, for Payment of what he owes me, an Aſſignation on *Alexander Black* for 15 *l.* payable on Demand, which *ditto Black* accepts to diſcount from what I owe him; which not being payable till the 8th *Auguſt*, I charge him with Intereſt of the 15 *l.* till then, *viz.* 2 *ſh.* 8 *d.* Total.	15	2	8
Ditto 30th,			
Bought and received for ready Money 16 Barrels of Figs at 2 *l.* 4 *ſh.*	35	4	
Sold and delivered for ready Money 300 Stone of Iron, at 14 *ſh.* *per* Stone.	60		
Paid to *James Mountgomry*, what I owe him for Herrings, in the Manner following. *Viz.* given in ready Money *l.* 18 — 08 An Aſſignation on *John Houſton* 7 — 12 26 — 00	26		
Edinburgh June 3d, 1717.			
Bought and received from *Daniel Trader* 30 Stone of Iron, at 3 *s.* 4 *d.* *per* Stone, is 50 *l.* whereof I have paid him 32 *l.* 10 *s.* the Remainder being 17 *l.* 10 *s.* he owes me by his Accompt.—Total.	50		
Bought upon forehand-Bargain from Mr. *Andrew Cochran*, to be delivered me the 1ſt *July* next, 24 Barrels of Raiſens, at 1 *l.* 10 *s.* *per* Barrel, is 36 *l.* Advanced him on the Bargain *l.* 16 — — The Remainder payable at Delivery, is 20 36 — —	36		
Ditto 6th,			
Paid to Mr. *David Johnſton* what I owed him, in Manner following, *viz.* Given in ready Money *l.* 103 — — Allowed me Rebatement for 5 Months Advance. 17 120	120		
Ditto 7th.			

	l.	s.	d.
Ditto 7th			
Sold and delivered to *John Paton*, 13 Bales of *French* Paper at 4 *l.* 18 *s. per* Bale, payable in 10 Months, by his Bill, is - -	63	14	
Sold upon Fore-hand Bargain to *John Houſton*, 13 Barrels of Raiſens, at 1 *l.* 15 *s.* 8 *d. per* Barrel, is 23 *l.* 03 *s.* 08 *d.* to be delivered 10th of *July* next.			
Advanced me on the Bargain. - *l.* 13 03 *s.* 08 *d.*			
The Remainder payable in 20 Days after Delivery. - - - 10:			
23 03 08	23	3	8
Received from *John Hutcheſon*, for what he owes me upon *John Houſton*'s Aſſignation, in ready Money. - -	6		
Ditto 10th,			
Delivered to *Peter Chapman* 4 Pieces of broad Cloath. meaſuring 76 Yards, at 18 *s. per* Yard, for Payment of what I owe him, *&c.*			
The Value of the Cloath is - - - *l.* 68 8			
Paid him the reſt in Money. - - - 03 12			
72 00	72		
Ditto 12th,			
Bought on Fore-hand Bargain from Mr. *William Wallace*, 20 Bales of *French* Paper, at 3 *l.* 16 *s. per* Bale, to be delivered the 1ſt of *Auguſt*. - - - - -			
Given him *per* Advance 100 Yards *Holland*, at 4 *s. per* Yard. - - *l.* 20			
The Remainder payable at *Martinmaſs* next, is, - - - - 56			
76	76		
Received from *William Smith*, for Payment of what he owes me, *Viz.* 8 Barrels of Figs at 2 *l.* 10 *s. per* Barrel *l.* 20			
The reſt in Money is, - - 13 05			
33 5	33	5	
Ditto 15th,			
Sold on Fore-hand Bargain to *William Smith*, 8 Bales of *French* Paper, at 4 *l. per* Ball, to be delivered 5th *Auguſt* next.			
Given me *per* Advance an Aſſignation on *Daniel Trader*, payable on Demand for *l.* 18			
The reſt payable at Delivery - - 14			
32	32		

Sold

Sold and delivered to *Peter Chapman* 18 Barrels of Figs, at 2 *l.* 17 *s. per* Barrel, is 51 *l.* 6 *s.* in Manner following,				*l.*	*s.* *d.*
Viz. Received in Money. – – –	*l.* 15				
An Assignation on Mr. *Andrew Cooper* payable in 3 Months, for – – –	20				
The Remainder payable by himself on Demand	16	6			
	51	6		51	06
——— *Ditto* 17th, ———					
Received from Mr. *Andrew Cooper* Payment of the Assignation *Peter Chapman* gave me on him, *viz.*					
Received in Money – – –	*l.* 19	12 *s.*			
Allowed him of Rebate for the Advancement		8			
		20		20	
——— *Ditto* 18th, ———					
Lent to Mr. *Andrew Hunter* upon his Bond payable at *Martimass* next.	*l.*	*s.*	*d.*		
The Principal Sum in Cash given is : :	100				
Interest till *Martimass* at 6 *per Cent*, is :	2	11	5		
	102	11	5 : : :	102	11 5
This Day shipped aboard the *Hind* of *Kinghorn* in the Harbour of *Leith*, *James Mariner* Master, for *London*, 56 Casks of Brandy, consigned to Mr. *John Blackwood* my Factor there, to be disposed for my Account.	*l.*	*s.*			
Value of the 56 Cask as it cost me : :	156				
Paid Fraught and Charge at Shipping :	11	: 16			
	167	: 16	: : :	167	16
I have ensured the said Cargo in the Hands of *Alexander Trusty* at 7½ *l. per Cent* of *Præmium*, paid him, is : : : : :				11	5
——— *Ditto* 21st, ———					
Bought from *Richard Dick* 2 Butts of Sack at 15 *l. per* Butt is 30 *l.* paid him ready Money; the same I have also sold this Day to Mr. *David Johnston* (who is to receive it from *Ditto Dick*; at 17 *l. per* Butt, payable in 5 Months, is : : : :				34	

Shipped

Shipped aboard the *Swan* of *Kirkcaldy*, *David Fortune* Maſter, theſe following Goods, for *Rochel* conſigned to *Daniel Stratton* my Factor there, to be diſpoſed for my Account, *viz.*		*l.*		*l.*	*s.*	*d.*
Impr. 168 Barrels of Herrings of my own coſt : :	126					
It. 280 Yards white Plaiden received this Day from *Alexander Brigs* for ready Money : : : : : : :	7					
It. 40 Barrel of Beef, bought this Day from *James Montgomery*, payable in 1 Month : : : :	60					
		193	: :			
Charges at Shipping paid, is : :		4	16 8			
Freight owing to the Owners of the Ship, :		10				
		207	16 8	207	16	8
Ditto 22d,						
I have lent to *Thomas Speedwell* on Bottomry of his Ship the *Mary* of *Borrowſtounneſs* 50 *l.* to be paid at her Arrival at *Lisbon*, to *Cornelius Mandoli* my Factor there, with 24 *l.* of Intereſt for my Risk, Total : : : : : :				74		
I have wagered againſt *John Ramſay*, that the *Britiſh* Parliament ſhall not be adjourned until the 1ſt of *July* next (if then) both of us conſigned in the Hands of *John Blackadder*, my Conſignation is				5		
Ditto 25th,						
Bought of Mr. *James Truſtwell* 4 Packs of Wooll, Number and Weight as follows, *viz.*	*Stone*	*Pd.*				
No. 1. containing	18					
No. 2. containing	22	14				
No. 3. containing	30					
No. 4. containing	25	10				
Total groſs	96	08				
3 allowed for Tare, which comes to near ½ *pd.* to 1 *Stone.*						
	93	08	Neat Weight at 10 *s.* 7 *d. per* Stone, is 49 *l.* 09 *s.* 6 *d.* ½, whereof I have paid in Money : : : :	19	09	6½
Given him 6 Barrels of Figs at 3 *per* Barrel *l.*				18		
The Remainder payable 1ſt *Auguſt* :				12		
				49	09	6½
					49	9 6½

I have

	l.	s.	d.
I have lent to *Hercules Handy* 40 *l.* on Bottomry of his Ship, *The Owner's Goodwill*, bound for *Stockholm*, to be repaid to me at her safe Return to *Leith*, with 10 *l.* Interest : : : :	50		
Wagered against *Thomas Murray* 10 *l.* upon a private Circumstance to be determined by Mr. *Matthew* St. *Clare* upon the 12th *July* next, in whose Hands we have consigned each : : :	10		
——*Ditto* 28th,——			
I have ensured on the *Grey Hound* of *Leith* bound for *Virginia*, the Value of 300 *l.* belonging to Mr. *James Dickson*, and have received the *Præmium* at 15 *l. per Cent.* : : : :	45		
Bought for ready Money 20 Pack of Sheep Skins at 2 *l.* 13 *s.* 4 *d. per* Pack, is : : : : :	53	6	8
——*July* 2d,——			
Received from Mr. *Andrew Cochran* in Performance of Fore-hand Bargain 24 Barrels of Raisins at 1 *l.* 10 *s.* : : :	36		
Paid *Ditto Cochran* the Remainder of the Price in Cash :	20		
Bought upon Fore-hand Bargain from *Daniel Trader* 100 Yards Holland at 5 *s. per* Yard to be delivered to me the 20th of *July* instant, under the Penalty of 5 *l.* : : :	25		
He owes me already by an Assignation, which discompts so much of the Price : : : *l.* 18			
The Remainder payable at Delivery : 7			
25	25		
——*Ditto* 4th,——			
Shipped aboard, *The Success of Bruntisland*, *John Kennedy* Skipper, the following Goods entrusted to the Management of Mr. *Quintin Malcolm* as Super-cargo; bound in the first Place for *Bourdeaux*, with a Power to him to carry them to any other Port of *France* where he can make best Market.			
Shipped, *viz.* 12 Barrel of Salmond *l.* 27			
Item, 4 Pack of Wooll of neat Weight 93 *St.* 8 *Pd.* : : } 49 09 6½			
76 09 6½			
Paid Fraught and Charges at Shipping 12 08			
88 17 6½	88	17	6½

This

	l.	s.	d.
This Day I have received the certain Advice, that *The Owner's Goodwill* belonging to *Hercules Handy*, is loſt on her Way to *Stockholm*; on Bottomry of which I had lent Money, Principal and Intereſt is, —	50		
Ditto 10th,			
Shipped aboard the *Wild-Cat of Dyſert*, *George Stirling* Maſter, bound for *Amſterdam*, 20 Packs of Sheeps Skins, conſigned to *Herman Van Rymer* Factor there, to ſell for my Account.			
The Value of the Skins : : L. 53 06 08			
Charges at Shipping paid : : 3			
For the Freight I have given the Owners 50 Stone of Iron at 4 *s.* : : } 10			
66 06 08	66	6	8
I have enſured on the *Unicorn of Pittenweem David Lyon* Maſter, bound for *Leghorn*, the Value of 100 *l.* belonging to *Archibald Cockburn*, —received the *Premium* in Caſh : : :	12		
Ditto 12th.			
Delivered to *John Houſton* in Performance of Fore-hand Bargain, 13 Barrel of Raiſins at 1 *l.* 15 *s.* 8 *d. per* Barrel.	23	3	8
I have ſold and delivered him 6 Barrel more at the ſame Price, payable 2d *Auguſt*, : : : :	10	14	
I have loſt the Wager with *Thomas Murray*, this Day determined againſt me by Mr. *Matthew St. Clare*, my Loſs is : :	10		
This Day I gained and received 15 *l.* by wagering upon a Horſe-Race at *Leith*, : : : : :	15		
Received Advice from *John Blackwood* my Factor at *London*, that he has received from on board the *Hind of Kinghorn* my 56 Cask of Brandy,—Value : : : : :	179	1	
Ditto 15th,			
This Day I received from *John Blackadder* 10 *l.* having gained the Wager againſt *John Ramſay*, the Parliament not being adjourned—	10		
Ditto 16th,			
I have enſured upon the *Speedwell of Leith*, *Nicholas Armſtrong* Maſter, bound for *Aleppo*, the Value of 600 *l.* at 15 *l. per Cent*, *Premium* is 90 *l.* for which I have an accepted Aſſignation on *Jeremy Thomſon*, payable in 7 Months. : : :	90		
Received Advice from *Cornelius Mandole* my Factor at *Lisbon*, that he has received from *Thomas Speedwell*, Maſter of the Ship, *The Mary of Borrowſtounneſs*, 74 *l.* I had lent on Bottomry,—being 222 *Milrees*, at 6 *s.* 8 *d. per Milree*, : : :	74		

	l.	s.	d.
Ditto 20th,			
Sold to Mr. *James Stevenſon* 2 Peices of broad Cloth, meaſuring 19 Yards, each at 6 *s. per* Yard, for which I have an Aſſignation on *Gideon Keith*, payable in 20 Days, : :	28	16	
Ditto 22d,			
I have this Day required *Daniel Trader* to deliver me the 100 Yards Holland formerly bought, which he cannot perform; therefore I charge him for the Value, *l.* 25			
Alſo for the Penalty incurred 5			
30 : : :	30		
Received Advice from *John Blackwood* my Factor at *London*, that he hath ſold 20 Cask of my Brandy for 6 *l. per* Cask, and received ready Money, : : : :	120		
Ditto 25th,			
I have taken from *Peter Chapman* for Payment of 16 *l.* 6 *s.* which he owes me, 18 *French Lewid'ors*, : :	16	6	
I have wagered againſt *Simeon Wilfull*, that there ſhall be no Peace concluded between *Sweden* and *Denmark* before 10th *Auguſt* next; each has engaged on Parole, for : :	6		
Ditto 28th,			
I have given away the 18 *Lewid'ors* I got from *Peter Chapman*, for 19 *s.* 6 *d.* a Peice, and received ready Money : :	17	11	
Nota, They coſt me only 16 *l.* 6 *s.* the Difference is 1 *l.* 5 *s.* gained			
Ditto 30th,			
I have certain Advice, that the *Unicorn of Pittenweem* is caſt away, and the Cargo loſt in her Way for *Leghorn*, whereupon I had enſured the Value of 100 *l.* upon which I have this Day paid to *Archibald Cockburn* 80 *l.* and he has diſcharged me, : :	80		
Auguſt 1ſt, 1717.			
Sold for ready Money, 10 Hhds. Claret Wine, at 12 *l. per* Hhd.	120		
Bought from Mr. *David Johnſton*, 3 Peices of broad Cloth, *viz.*			
No. 1ſt, contains 25 Yards at 14 *s.* is *l.* 17 10 *s.*			
No. 2d, 30 Yards at 16 *s.* 8 *d.* is 25			
No. 3d, 18 Yards at 12 *s.* is 10 16			
73 Yards — Value — 53 06			
For which I have given him my Bill, payable 1ſt *October* next, —	53	6	
Dito : : :			

	l.	s.	d.
Ditto 3d,			
This Day Mr. *William Wallace* has delivered to me 20 Bales of *French* Paper formerly bought : : : : :	76		
For Payment of Part, he has taken my Aſſignation on *William Smith*, payable on Demand, (and leaves the reſt in my Hands), the Aſſignation is, : : : : : :	6		
Delivered to *William Smith* 6 Bales of Paper formerly ſold, both being content, that the 6 Bales implement the Bargain, which was for 8 Bales;			
The 6 Bales delivered, — worth *l.* 24			
The 2 Bales retained by me 8			
	32		
Received Advice from Mr. *Quintin Malcolm* Super-Cargo aboard *The Succeſs of Burntiſland*, that he has got ſafe to *Bourdeaux*; ſold for ready Money my 12 Barrel of Salmond, the neat Proceeds whereof (Charges and Proviſion paid) amounts to 160 *Crowns* at 56 *d. per Crown*, is 37 *l.* 6 *s.* 8 *d.* for which he has loaded by my Order, 7 Hhd. Claret Wine, to be brought hither.	37	6	8
Ditto 5th,			
Drawn upon *John Blackwood* my Factor at *London* 100 *l.* payable to *Chriſtopher Higgins*, or Order, upon Sight; for which I have received ready Money, with 2 *l.* for the Exchange,—in all :	102		
Ditto 8th,			
Received from *John Houſton* 20 *Carolus*'s of Gold, which I have taken at 23 *s.* a Piece; in all 23 *l.* to Account of what he ows me for Raiſins. : : : : :	23		
I have delivered the 20 *Carolus*'s of Gold, which I took from *John Houſton* at 23 *s.* to *Alexander Black* in part of my Debt, for 22 *s.* 6 *d.* is 22 *l.* 10 *s.* : : : : :	22	10	
N. B. I have loſt by them 10 *s.*			
Received Advice from *Herman Van Rymer* my Factor at *Amſterdam*, that he hath receiv'd from aboard the *Wild-Cat* of *Dyſert*, 18 Pack of Sheep-Skins for my Account, (the remaining 2 Pack of the 20 which I ſhipped being loſt at Sea,) and that he hath alſo ſold 10 Pack thereof for ready Money; which by his Accompt, deducing Charges and Proviſion, amounts to 436 $\frac{4}{11}$ *Guilders*, at 22 *d.* per *Guilder*, is 40 *l.*			
	l.	*s.*	*d.*
The total Charge of the Voyage is, : :	63	6	8
Amount of the 10 Pack ſold, is : :	40		

Ditto 10th,

Received Advice from *Daniel Stratton* my Factor at *Rochel*, that he hath receiv'd from aboard the *Swan* of *Kirkcaldy*, my Goods consigned to him, all in good Order, *viz.*

	l.	*s.*	*d.*
168 Barrel of Herrings, cost	126		
40 Barrel of Beef,	60		
280 Yards white Plaiden	7		
The Charges of the Voyage, stated to that Accompt, is	14	16	8
	207	16	8

l.	*s.*	*d.*
207	16	8

Receiv'd Advice from *Cornelius Mandoli* my Factor at *Lisbon*, that he hath shipt by my Order, and for my Account, 50 Barrel of Raisins, aboard the *Red-Lyon* of *Leith*, (then at *Lisbon*) *Matthew Steadman* Master, which with all Charges, and his Provision, are worth 222 *Milrees*, at 6 *s.* 8 *d.* : : : : 74

Ditto 13th,

I have wagered on Parole against Mr. *John Justice*, upon a private Circumstance, to be determined by Mr. *John Mein*, the Hazard 10

I have lent to *Lawrence Lovemoney*, upon Bottomry of his Ship the *Faulcon* of *Aberdeen*, lying in the Harbour of *Leith*, bound from thence to *Genoa*, 60 *l.* to be repaid to me at his safe return, with 20 *l.* for my Risque. : : : 80

Ditto 14th,

I have paid Mr. *James Trustwell*, what I owed him for Wooll, thus, I have given him 100 Yards Holland, at 3 *s.* 6 *d. per* Yard, is 18 *l.* 6 *s.* 8 *d.* and he has given me in the Overplus, *viz.*

My Debt due him, is	:	12 *l.*	:
The Overplus receiv'd	:	6	
		18	6 8

l.	*s.*	*d.*
18	6	8

Received Payment from *Gideon Keith* of *James Stevenson*'s Bill on him, receiv'd in Money. : : : : 28 16

Received Advice from *John Blackwood* my Factor at *London*, that he hath sold the remainder of my Brandy, *viz.* 36 Cask, for ready Money, the neat Proceeds whereof after deducing all Charges and Provision, as *per* his Accompt, amounts to : : 200

Ditto 55th,

Received Advice from *Herman Van Rymer* Factor at *Amsterdam*, that he hath sold for ready Money for my Accompt, 8 Packs of Sheep Skins, the neat Proceeds of which *per* his Account, amounts to 400 *Guilders*, at 22 $\frac{1}{2}$ *d.* per *Guilder*, is : : : 37 10

Remitted

Remitted to me by *John Blackwood* Factor at *London*, for my Account, 20 *l.* in his own Bills on Mr. *Robert Blackwood* Merchant in *Edinburgh*, which he has paid me upon Sight. — 20

Ditto 6th,

Receiv'd from aboard a *Dutch* Brigantine the following Goods consigned to me by *Hero Moy* at *Amsterdam*, to sell for his Account; *Viz.* 8 Pack of *Flanders* Lint, 40 Dozon of Wooll-Cards, 50 Pound weight of *Bohea* Tea, } Upon Receipt whereof I have paid of Charges, — 3 14 8

Drawn upon *Herman Van Rymer* my Factor at *Amsterdam* 436 *Guilders*, payable to *John Beaver* or Order, upon Sight, for which I have receiv'd ready Money at 22 ¼ *d.* per *Guilder*. — 40 8 5

Ditto 19th,

I have lost the Wager, (which was on Parole) against Mr. *James Justice* this Day, determined against me by Mr. *John Mein*, and have given him Cash. — 10

I have gain'd the Wager, (which was on Parole) against *Simeon Wilfull*, there being no Peace concluded betwixt *Sweden* and *Denmark*, I have received in Cash — 6

Ditto 20th,

Sold for ready Money, for the Account of *Hero Moy* 8 Pack of *Flanders* Lint, at 4 *l.* *per* Pack, is, — 32

Remitted to *Hero Moy* for his Account, 20 *l.* in the Bills of *John Duncanson* on *Maurice Moliere*, payable at 28 Days Sight, which I have instantly paid, being 208 ⅓ *Guilders*, at 23 *d.* *per Guilder*. — 20

Received this Day from aboard a Bark of *Prestonpans* from *London*, the following Goods, with the Bill of Leading inclosed in his first Letter of Advice come with them, which *John Blackwood* my Factor there, hath sent me by my Order, and in Return for my Accompt of Brandy sold by him, *Viz.*

400 Yards of fine Musline at 5 *s.*
The prime Cost of which at *London*, is in all *l.* — 100.
166 ⅔ Yards fine Holland, at 6 *s.* is in all. — 50
— 150 — 159

The Accompt of Charges of Provision owing to him, amounts to — *l.* 16 19 *s.* — 16 19

Ditto 22d,

Received Advice from *Daniel Stratton* my Factor at *Rochel*, that he hath sold on time for my Account to sundry Persons, 168 Barrels of Herrings, the neat Proceeds of which by his Accompt, amounts to 635 *Crowns* at 56 ½ *d.* is — 149 9 9½

Bought

Bought upon Forehand-Bargain from *Thomas Dalziel* 100 Bolls of Wheat, to be delivered me, the first of *November* next, at 1 *l.* 10 *s.* the Boll, is 150 *l.*

	l.	*s.*	*d.*
Advanced him on the Bargain — *l.* 10 —			
The Remainder payable at *Martinmass.* — 140			
150	150		

Drawn upon *Herman Van Rymer* my Factor at *Amsterdam* 400 *Guilders*, at 22 ½ *per Guilder*, is 37 *l.* 10 *s.* payable to Mr. *Andrew Cochran*, or Order, at single Usance, for the Value to be paid by him to me, in one Month. — — — — 37 10

Ditto 23d,

Sold for the Account of *Hero Moy*, 40 Dozen of Wool Cards, at 16 *s. per* Dozen, to *Peter Chapman*, payable in 20 Days. 32

Received Advice from Mr. *Quintin Malcolm* my super Cargo aboard the *Success* of *Burntisland*, that having left *Bourdeaux*, he is safe at *Rochel*; and that he has consigned my 4 Packs of Wool in the Hands of *Daniel Stratton* my Factor there, being ready himself to sail homewards, Value of the Wooll as formerly charged; with a Part of the Expences, is — — — — 55 9 6½

Ditto 24th,

I have certain Advice, that the *Red-Lyon* of *Leith* is lost, and her whole Cargo, in her Way from *Lisbon*, aboard of which I had 50 Barrels of Raisins sent me by *Cornelius Mandole* my Factor, Value. 74

Ditto 26th,

Having received a Letter from *Charles Chareu* at *Bourdeaux*, advising me that he is content to embrace my Proposal of keeping an Account of Exchange betwixt us, each for ½. I have in Pursuance thereof, remitted to him this Day a Bill, the Draught of *Peter Stewart* upon *Elias Morgan*, for 400 *Crowns*, payable upon Sight to ditto *Chareu*, the Value whereof I have instantly paid in Cash to ditto *Stewart*, at 56 *d. per Crown*, is — — 93 6 8

I have this Day bought a House, *viz.* the 5th Story of — Land near the Head of the *Canongate*, for 300 *l.* to be paid to Mr. *John Campbel* in 1 Year; and I am to pay besides an Annuity of 3 *l.* payable quarterly to the said *John Campbel*, during the Life of his Mother, and for her Behoof, the first Quarters Payment, being due at *Martinmass* next.

	l.	*s.*		
Price of the House. —	300			
First Quarters Payment of the Annuity due at *Martinmass* next, —	15			
	300	15	300	15

The

The said House is presently possessed by *William Davidson*, who took it at *Whitsunday* last, for one Year, for 20 *l.* payable at two Terms, *Martinmass* and *Whitsunday*, in equal Halfs, and to the whole ½ Years Rent from *Whitsunday*, I have an Assignation. — *l.* 20

Ditto 29th,

I have this Day by the Death of *D. M.* my Uncle got in Legacy, an House in the *Castle-Hill* worth 200 *l.* after the following Legacy is paid, which has stood waste, since *Whitsunday* last. — 200

I am burdened with a Legacy of 30 *l.* to Mr. *Thomas Richman*, payable at *Martinmass* next. — — — — 30

I have bought ⅓ of the Ship, the *Dragon* of *Queensferry*, from *Thomas Dalziel* for 100 *l.* payable at *Candlemass* next. — 100

The said Ship lies now in the Harbour of *Leith*, and ready to sail for *Stockholm*, freighted by Mr. *James Murray* for 30 *l.* payable at *Martinmass* next, to the ½, whereof I'm assigned by the said *Thomas Dalziel*. — — 10

Ditto 30th,

I have this Day entred into Partnership with *Benjamin Barclay* for an Inland Trade, to be managed by him for both our Accounts, each ½, and he to be allowed 10 *per Cent.* for his Commission; in pursuance whereof I have given him in Cash, : : : 20

Remitted to me by *John Blackwood* my Factor at *London*, 36 *l.* in his own Bill, on Mr. *Robert Blackwood* Merchant in *Edinburgh*, payable in one Month; accepted — — 36

September 2d,

I have this Day shipped aboard the *Rose* of *Kingborn*, *J. C.* Master, bound for *Amsterdam*, the following Goods, by order of *Hero Moy* at *Amsterdam*, and for his Account;

	l.	*s.*
Viz. 4 Packs of Sheeps Skins, which I have this Day received and paid in Cash. — —	12	
Charges at buying and shipping; paid —	2	15
	14	15
My Provision. — —		15
	15	10

15 10

By the Death of a Friend, I have got a Legacy of 50 *l.* payable in 3 Months, by Mr. *Andrew Cochran*, Executor to the deceased. 50

I

I have taken *John Blackadder* Son to Mr. *Adam Blackadder*, for my Apprentice for 3 Years; for which I have 70 *l.* for his Maintainance and Education, whereof there is, *l.*

Now presently paid. - 20

The rest payable in one Year. - 50

70 | *l.* 70

Ditto 5th,

Remitted to me by *Charles Chareu*, for our Accompt of Exchange 200 *Crowns* at 58 *d.* is 48 *l.* 6 *s.* 8 *d.* the Draught of *Allan Bruyere* on *Andrew Dick*, payable on Sight, which being this Day presented, I have received Payment. - - | *l.* 48 *s.* 6 *d.* 8

Ditto 6th,

I have paid the Owners of the Ship the *Swan* of *Kirkcaldy*, what I owed for Freight on the Voyage to *Rochel*, in Cash : | 10

Received from aboard the Succefs of *Burntisland*, arrived from *Bourdeaux* 7 Hhds. Claret Wine, which Mr. *Quintin Malcolm* my Super-Cargo for that Voyage, loaded for me at *Bourdeaux*, in return of my Salmond, sold by him there,

| *l.* | *s.* | *d.*
---|---|---|---
The 7 Hhds. charged to the Voyage from *Bourdeaux*, | 37 | 6 | 8
I have paid of Charges here, : : : : : | 5 | 10 |
| 42 | 16 | 8 | *l.* 42 *s.* 16 *d.* 8

Ditto 7th,

This Day I have shipped aboard the *Unicorn* of *Leith*, bound for *London*, 50 Pound weight of *Bohea* Tea belonging to *Hero Moy*, by his Order consigned to *Evander L'Estrange* his Factor at *London*;

| *l.* | *s.* | *d.*
---|---|---|---
Paid by me of Charges since his Goods have been in my Custody, (besides what was paid at the first Receipt.) | 4 | 14 | 8
My Provision on his whole Account of Goods, | 12 | |
| 16 | 14 | 8 | *l.* 16 *s.* 14 *d.* 8

Paid for 15 Gallons Wine to fill up the 7 Hhds. that came from *Bourdeaux*. : : : : : | 3

I have

I have this Day bought and receiv'd, for the Account of *Chriſtianus Marbach* at *Rotterdam* and by his Order, the following Goods, to be ſent to him by the 1ſt Occaſion, *viz.*

	l.	s.	d.	l.	s.	d.
200 Pair of coarſe Stockings from Monſieur St. *Bonnet* Stocking-Maker, payable in 4 Month.	50					
700 Yards coarſe Linnen, whereof I have paid,	7	10				
The reſt of the Linnen due to *Thomas Dalziel*, in 2 Months.	10					
	67	10				
Paid of Charges, : :		18				
My Proviſion, : :		6				
	74	8		74	8	

Ditto 10th,

Drawn upon *Charles Chareu* at *Bourdeaux*, for our Accompt of Exchange 500 Crowns at 57 ½ *d. per* Crown, is 119 *l.* 15 *s.* 10 *d.* payable at ſingle Uſance to *Anthony Van Helm*, or Order, the Value whereof I am to receive in 1 Month from Mr. *James Murray*. 119 15 10

Received Advice from *Daniel Stratton* at *Rochel*, that he hath received Payment of the Debts owing for my Herrings, and deſires me to draw for it when I pleaſe, being 635 Crowns at 56 ½ *d.* 149 9 9½

Ditto 11th,

Received Advice from *Herman Van Rymer* my Factor at *Amſterdam*, that he hath by my Order and for my Account, bought and ſhipped aboard the *Lamb* of *Cockeny*, (then at *Amſterdam*) the following Goods, *viz.*

	l.	s.	d.	l.	s.	d.
100 Pound weight of Coffee, :	40					
74 Pound weight of Cinnamon, :	37					
His Charges and Proviſion, :	8	16	9			
Being 981 *Guilders* at 21 *d.* per *Guilder*,	85	16	9	85	16	9

Ditto 13th,

Received from *Peter Chapman*, Payment of what he ow'd for *Hero Moy*'s Accompt of Goods, in Caſh : : : 32

Hero Moy's Goods being all diſpoſed of, and the out-ſtanding Debts paid, the Balance of his Accompt of Goods is, : 43 10 8

This Day ſhipped aboard the *Mermaid* of *Borrowſtounneſs*, *Magnus Black* Maſter, the Stockings and Linnen bought the 7th inſtant, for the Account of *Chriſtianus Marbach*, upon which I have advanced the Freight to the Owners, and other Charges, : 6

	l.	s.	d.
I have wagered againſt *Thomas Arrowſmith*, 10 *l.* conſigned in the Hands of Mr. *Gabriel Bowman*, that the Ship the *Crocodile* of *Leith*, now at *Virginia*, ſhall not be home before the 1ſt of *November*,	10		
Ditto 15th,			
Receiv'd Payment from Mr. *Robert Blackwood*, of the Bill Mr. *John Blackwood* remitted me on him; by an Aſſignation on Mr. *David Johnſton*, payable on Demand, : : :	36		
Paid to *James Montgomery* what I ow'd him for Beef, in the Manner following, *viz.*			
Given him 500 Stone of Iron, at 3 *s. per* Stone, is, 75			
He has given me the Overplus of the Price in Caſh, 15			
Difference I ow'd him, : 60	60		
Ditto 18th,			
Benjamin Barclay adviſes me, that he has bought for the Account in Company betwixt us, ſeveral Goods to the Value of 60 *l.* whereof my ½ is 30, of which he has already 20 *l.* and for the other 10 *l.* he has drawn a Bill on me payable to *Alexander Black* in two Months, which I have accepted. : : : :	10		
Received Advice from *Daniel Stratton* Factor at *Rochel*, that he hath ſold for ready Money my 40 Barrels of Beef, the neat Proceeds whereof, as *per* Account is 336 *Crowns* at 57 *d.* :	79	16	
Received further Advice from *Daniel Stratton*, that according to my laſt Advice, he has ſhipped aboard *The Fortune*, belonging to St. *Martines*, *Piere Petite* Maſter, bound for *Amſterdam*, conſigned to *Herman Van Rymer*, my 4 Packs of Wool, lying in his Hands;			
The Value as they ſtand already charged *l.* 55 09 6½			
He has paid out of Charges, with his Proviſion, 6 *Crowns*, which at preſent Exchange of 57 *d.* is : : : : } 1 08 06			
56 18 0½	56	18	0½
Ditto 20th,			
Sold to a Stranger 66⅔ Yards Holland, and received Caſh	26	8	
Received from *John Houſton*, in Payment of his Account, of Caſh	3	14	
Ditto 22d,			
Drawn upon me be *Charles Chareu*, for our Account of Exchange 300 *Crowns* at 57 *d. per Crown*, is 71 *l.* 5 *s.* payable to Mr. *Robert Blackwood* at ſingle Uſance, : : : :	71	5	

Arrived

Arrived here, *The Lamb of Cockeny*, out of which I have received 100 Pound Weight of Coffee, and 74 Pound Weight of Cinnamon, loaded by my Order, and for my Account (of which I had Advice) by *Herman Van Rymer* Factor at *Amsterdam*,

	l.	s.	d.	l.	s.	d.
The Coffee worth in *Holland*, by my Factor's Account	40					
The Cinnamon : : :	37					
The Charges and Provision to my Factor :	8	16	9			
Total Charge of the Voyage	85	16	9			
I have paid of Freight, and other Expences here	5					
	90	16	9	90	16	9

I have this Day sold and delivered the 100 Pound Weight of Coffee to Mr. *Adam Blackadder*, at 12 *s.* the Pound, payable in 6 Months by his Bill, is : : : : 60

Ditto 25th,

Received Advice from *Herman Van Rymer* my Factor at *Amsterdam*, that he hath drawn for my Account, upon *Daniel Stratton* my Factor at *Rochel* 180 *Crowns*, which at 56 *d. per Crown*, is 458 $\frac{1}{11}$ *Guilders*, at 22 *d. per Guilder*, the Value of each *Species* in *English* Money being : : : : : 42

Drawn upon *Daniel Stratton* Factor at *Rochel* for my Account, 100 *Crowns* at 57 *d. per Crown*, is 23 *l.* 13 *s.* 4 *d.* payable on Sight to *David Broomfield*, or Order; for which I have received,

	l.	s.	d.	l.	s.	d.
Viz. 2 Pieces of broad Cloath, containing 16 Yards each at 10 *s. per* Yard, is : : :	16					
The rest in Money : : :	7	13	4			
	23	13	4	23	13	4

Ditto 28th,

Benjamin Barclay has sold off the Goods in Partnership betwixt us for ready Money 80 *l.* and for my Share he has given me, *viz.*

	l.	s.		l.	s.	d.
In Cash : : : : :	25					
I have taken for the rest 100 Stone Weight of Iron at 3 *s. per* Stone :	15					
	40			40		

Drawn upon me by *Hero Moy*, for his Accompt 8 *l.* 8 *d.* payable upon Sight to Mr. *Robert Clark*, which I have accepted, and instantly paid in Cash : : : : 8 8

October 1st, 1717.

	l.	s.	d.
Paid to the Custom-house of *Leith* what I owed as the Duty of Wine	40		

Ditto 5th,

Received this Day (with the first Advice concerning the same) from aboard *The Mer-maid of Borrowstounneſs*, the following Goods which *Chriſtianus Marbach* at *Rotterdam*, by my Order has sent me in return for what by his Accompt current, he ows me,

Viz. 100 Yards Holland, cost with his Charges, *&c.*	*l.* 20		
4 Packs of Lint, containing 18 *Stone* each, cost	36		
Remitted me a Bill of his own Draught, on *George Gordon*, payable in 2 Months, which he has accepted for	24	08	
	80	08	
I have paid of Charges here on the Goods	4	12	
	85	00	85

Abraham Fairholm has paid me what he owed, for Holland in Manner following

	l.	s.	d.	
I have received in Cash	24			
I have rebeated him; becauſe he complains he had bad Markets in selling it	2	5		
	26	5		26 5

Ditto 7th,

By my Book of Charges of Merchandize, I have paid out since 1st of *May* last, beside what are charged to particular Accompts 20

By my Book of Houſhold Expences I have laid out since 1st of *May* 30

There is owing by particular Accompts standing in the Book of Houſhold Expences 15

Follows the JOURNAL *of this* WASTE-BOOK, *wherein the Number of the* Folio *in the* LEGER, *where the ſeveral Debtors and Creditors ſtand, are written upon the Margin, the Debtor above, and Creditor* Folio *below the Line; and when there are two or more Debtors or Creditors, to the firſt, ſecond, &c. Debtor or Creditor that occur, belong the firſt, ſecond, &c. Figures that occur in the Margin above or below the Line.*

THE

THE Journal-Book No. I.

EDINBURGH MAY 1st, 1717.

SUNDRY Accompts Debtors to STOCK, for the Total of my Estate, and Debts owing to me, conform to Inventary taken this Day; Viz.

		l.	s.	d.
1	Cash; for the ready Money lying by me,	800		
2	Claret Wine; for 5 Tons ditto, at 8 *l. per* Hhd. is,	160		
2	Tobacco; for 18 Hhds. *Virginia*, neat Weight of each is 600 *pd.* cost me,	208	8	
2	Raisins; for 30 Barrels ditto, at 1 *l.* 12 *s. per* Barrel,	48		
3	Broad Cloth; for 14 Pieces ditto, containing 19 Yards, each at 16 *s. per* Yard is,	212	16	
2	Mr William Wallace; for what he ows me by his Bond, dated 1st of *February* last, payable at *Martimas* next,	*l.*	*s.*	*d.*
	Principal Sum,	100		
	Interest owing at *Martimas* at 5 *per Cent.*	3	15	
		103	15	103 15
3	Mr Andrew Hunter; as the Balance of an Accompt, on Demand,	80		
3	Mr Andrew Cochran; on Demand,	148		
3	Accompt of Movables and Houshold-Furniture,	200		
1				

Stock Debtor to sundry Accompts, for my present Debts; Viz.

1	To Mr. David Johnston; payable 1st of *November* next,	120		
4	To Mr. James Trustwell,	60		

To

3 To Sundry of my standing Charges; owing the Custom-House of Leith of Duty of Wine, payable 1st of October next, 40
4 To Mr. Thomas Stephan; for 1 Years Rent of the House presently possessed by me, commencing from *Martimass* last, 15
4 To Mr. Andrew Cooper; for 1 Years Rent of his Cellars at *Leith* possessed by me, commencing from *Martimass* last, 10

Edinburgh May 2d, 1717.

1 Cash Debtor to Claret Wine; for 7 Hhds. sold and delivered to *Alexander Paygood*, at 12 *l. per* Hhd is, 84
2

4 William Smith Debtor to broad Cloth; for 2 Pieces ditto containing 19 Yards each, in all 38 Yards, at 17 *s.* 6 *d. per* Yard, payable in 2 Months. 33 5
3

Ditto 5th,

4 French Paper Debtor to *Peter Chapman* for 10 Bales ditto; at 4 *l. per* Bale, payable in 1 Month, 72
5

Ditto 6th,

Sundry Accompts Debtors to French Paper; for 5 Bales ditto sold to Mr. *John Paton* Bookseller in *Edinburgh*, at 5 *l. per* Bale, is in all 25 *l. viz.*

	l.	*s.*	*d.*
Cash received,	10		
Ditto *Paton* for the Remainder in 20 Days	15		
	25		25

1, 4
4

NOTA, It were the same in effect to make *John Paton* Debtor for the whole, and Creditor by Cash for what's received; for either Way there remains no more Debt or Credit on any of the Accompts, than what's just. Understand the same in like Cases.

5 Brandy Debtor to sundry Accompts; for 32 Casks ditto, bought and received from *David Watson*, at 3 *l. per* Cask, is in all 96 *l. viz.*

	l.	*s.*	*d.*
To Cash, given in part	16		
To Mr. *Andrew Hunter* for my Bill on him for the Remainder,	80		
	96		96

1, 3

N. B. I have no Accompt with *Watson*, since I have clear'd the whole.

Ditto 7th,

5 Mr. Daniel Trader Debtor to Claret Wine; for 3 Hhds. ditto sold and delivered to *Elias Freeman*, at 12 *l.* 10 *s. per* Hhd. for which I have an accepted Bill on ditto *Trader*, payable on Demand. 37 10
2

Sundry

Ditto 8th,

Sundry Accompts Debtors to Accompt of Raisins, for 10 Barrels ditto, sold and delivered to Mr. *John Houston*, at 3 *l. per* Barrel, is in all 30 *l. viz.*

		l.	s.	d.
1,5,5	Cash, received in part, : :	8		
2	Accepted Assignations; for an Assignation on Mr. *John Houston* payable in 10 Days, in part,	6		
	Ditto *Houston*, for the Remainder, payable in 2 Months	16		
		30		30
5 1	Brandy Debtor to Cash; for 24 Casks ditto, bought and received from Mr. *John Ferguson*, at 2 *l.* 10 *s. per* Cask, paid	60		
6	Iron Debtor to sundry Accompts, for 1000 Stone weight ditto, bought and received from *Alexander Black*, at 3 *s. per* Stone, is in all 150 *l. viz.* To Mr. *Andrew Cochran*, for my Bill on him payable to ditto *Black*, in part of the Iron,	100		
3,6	To Ditto *Black* for the Remainder, payable in 3 Months.	50		
		150		150

N. B. It were the same, to make Iron Debtor to *Black* for the whole, and him Debtor to *Andrew Cochran* for the Bill.

Ditto 11th,

Sundry Accompts Debtors to Broad Cloth; for 6 Pieces ditto, containing 19 Yards each, at 17 *s.* 4 *d. per* Yard, in all 114 Yards, worth 98 *l.* 16 *s.* sold and delivered in Barter with *Thomas Jameson*, for which I received, *viz.*

		l.	s.	d.			
6,1	Holland; for 300 Yards at 4 *s.* 4 *d. per* Yard, is	60					
3	Cash received, : : :	38	16				
		98	16		98	16	
4	Salmond Debtor to Raisins; for 15 Barrels Raisins at 1 *l.* 16 *s. per* Barrel is 27 *l.* delivered in Barter with *Robert White*,						
2	for which I have received 12 Barrels of Salmond, at 2 *l.* 5 *s. per* Barrel. : : : :				27		
7 6	Abraham Fairholm, Debtor to Holland for 100 Yards ditto, sold and delivered to him, at 5 *s.* 3 *d. per* Yard, payable in 5 Months, : : : : :				26	5	

Herrings

Ditto 14th,

Herrings Debtor to sundry Accompts, for 14 Lasts ditto cured with *Spanish* Salt, bought and received from Mr. *James Montgomery*, at 15 *l. per* Barrel, is 126 *l. viz.*

		l.	s.	d.
7	To Cash, paid in Part.	60		
1,3,6	To Mr. *Andrew Cochran* for my Bill on him, payable to ditto *Montgomery*	40		
	To ditto *Montgomery* for the rest, on demand.	26		
		126		126

Cash Debtor to Tobacco, sold a Stranger 3 Hogsheads at 4 *l.* 14 *s. per* Hogshead, is

1 2		14	2	

Ditto 20th,

Sundry Accompts Debtors to Tobacco, for 2 Hogsheads ditto sold and delivered in Barter, at 4 *l. per* Hogshead, *viz.*

		l.	s.	d.
1,5 2	Cash, received.	2		
	John Houston, for 4 Barrels of Figs, which I took in the Barter at 1 *l.* 10 *s. per* Barrel; but immediately sold to him, at 1 *l.* 18 *s.* payable on Demand.	7	12	
		9	12	9 12

N. B. It had been the same to make the Figs Debtor (to Tobacco) for the Price at which they were taken; and then to make *John Houston* Debtor to Figs, as they were sold to him; but since there is no Accompt of Figs standing as yet in the Leger, the Way I have taken, is preferable.

Linnen Debtor to sundry Accompts, for 750 Yards ditto, received in Barter with *Ninian Nicolson*, at 16 *s. per* Yard, is 50 *l. viz.*

		l.		
7 6,1	To Iron delivered 200 Stone at 3 *s.* 6 *d.* is	35		
	To Cash paid overplus.	15		
		50		50

Ditto 24th,

Mr. James Tullwell, Debtor to Cash; paid what I owed him.

4 1		60		

Cash, Debtor to *Daniel Trader*, paid me in Part.

1 5		20		

Ditto 28th

Alexander Black, Debtor to sundry Accompts; for as much as *John Paton* has drawn on him, to Account of what ditto *Paton* owes me, 15 *l.* which ditto *Black* accepts to discount

6 count from what I owe him, which not being payable till the 8th *August* next, I charge him with Intereſt of the 15 *l.* till then, *Viz.* To *John Paton* for the Contents of the Bill. — — — 15

4,8 To Profit and Loſs for the foreſaid Intereſt 2 8

15 2 8 | 15 2 8

Ditto 30th;

7 Figs Debtor to Caſh, for 16 Barrels ditto, at 2 *l.* 4 *s. per* Barrel bought, and received for ready Money, is — 35 4

1

1 Caſh Debtor to Iron, for 300 Stone ditto, at 4 *s. per* Stone, ſold and delivered for ready Money. — — 60

6 *Ditto* 30th,

6 James Montgomery Debtor to ſundry Accompts; paid him what I was owing him, *viz.* — *l.* *s.* *d.*

To Caſh, in Part. — 18 8

1,5 To *John Houſton* for my Aſſignation. — — — — 7 12

26 | 26

June 3d,

6 Iron Debtor to ſundry Accompts, for 300 Stone ditto, at 3 *s.* 4 *d. per* Stone, is 50 *l.* boughtand received from *Daniel Trader, viz.* *l.* *s.*

To Caſh paid in Part. 32 10

1, 5 To ditto *Trader* for the Remainder, which clears his Debt to me. 17 10

50 | 50

8 Delivery-Accompt of Buying, Debtor to Mr. *Andrew Cochran*; for 24 Barrels Raiſins at 1 *l.* 10 *s. per* Barrel to be delivered to me 1ſt *July* next. — — — 36

3 Ditto Cochran, Debtor to Caſh, advanced on the Bargain. 16

3

1 *N. B.* It were the ſame to make Delivery-Accompt Debtor to Caſh, for what is advanced, and to *A. Cochran*, for the Remainder of the Price.

Ditto 6th,

3 Mr. David Johnſton Debtor to ſundry Accompts; having cleared and paid him what I was owing; *viz.* *l.*

1, 8 To Caſh given him in full Payment. — 103

To Profit and Loſs allowed me for 5 Months Advance. — — — 17

120 | 120

Ditto 7th,

John Paton Debtor to French Paper, for 13 Bales ditto at 4 *l.* 18 *s. per* Bale; payable in 10 Months, by his Bill. — *l.* 63 *s.* 14 *d.*

John Houston Debtor to Delivery-Accompt of Sales; for 13 Barrels of Raisins sold him at 1 *l.* 15 *s.* 8 *d. per* Barrel, to be delivered 10th *July* next. — 23 3 8

Cash Debtor to ditto *Houston*, advanced on the Bargain— 13 3 8

Nota, The Remainder is payable within 20 Days, after Delivery.

Cash Debtor to accepted Assignations; received from *John Hutcheson* Payment of *John Houston*'s Assignation upon him; (for which the Accompt of Assignations, was charged Debtor.) — 6

Ditto 10th,

Peter Chapman Debtor to sundry Accompts; paid what I owe him 72 *l.* in manner following, *viz.*

	l.		
To broad Cloth for 4 Pieces ditto, measuring in all 76 Yards, at 18 *s. per* Yard, is,	68	08	
To Cash given him. — —	3	12	
	72	00	72

Ditto 12th,

Delivery Accompt of Buying, Debtor to Mr. *William Wallace*; for 20 Bales of *French* Paper, at 3 *l.* 16 *s. per* Bale, to be delivered to me, the 1st of *August*. — — 76

Ditto Wallace Debtor to Holland, for 100 Yards at 4 *s. per* Yard, given him *per* Advance, (the rest being payable at *Martinmas* next.) — — — 20

Sundry Accompts Debtors to *William Smith*; received in Payment of what he owes me, 33 *l.* 5 *s. viz.*

	l.		
Figs for 8 Barrels at 2 *l.* 10 *s. per* Barrel, is	20		
Cash received. — — —	13	05	
	33	05	33 5

Ditto 15th,

William Smith Debtor to Delivery-Accompt of Sales; for 8 Bales *French* Paper, at 4 *l. per* Bale, to be delivered 5th *August* next, is — — — — — 32

Daniel Trader, Debtor to ditto *Smith* for his Assignation, on ditto *Trader*, payable to me on Demand; *per* advance of the Paper, (the rest payable at Delivery.) — — 18

Sundry Accompts Debtors to Figs for 18 Barrels ditto, sold and delivered to *Peter Chapman* at 2 *l.* 17 *s. per* Barrel, is 51 *l.* 6 *s. viz.*

Cash

		l.	s.	d.	l.	s.	d.
	Cash received. - - -	15	00	00			
1,4,5	Mr. *Andrew Cooper* by ditto *Chapman's* Assignation in 3 Months. -	20	00	00			
7	Ditto *Chapman*, for the Remainder; on Demand. - - -	16	06				
		51	06	00	51	6	

Ditto 17th,

4 Sundry Accompts, Debitors to Mr. *Andrew Cooper*; having paid me the Contents of *Peter Chapman's* Assignation on him, 20 *l.* in Manner following, *viz.*

		l.	s.		
1,8	Cash, received in full Payment. -	19	12		
	Profit and Loss rebated for the Advance.		8		
		20	00	20	

Ditto 18th,

3 Mr. Andrew Hunter, Debitor to sundry Accompts 102 *l.* 11. *s.* 5 *d.* Principal and Interest, lent him upon his Bond, payable at *Martimass* next, *viz.*

		l.	s.	d.			
1,8	To Cash for the principal Sum : :	100					
	To Profit and Loss for Interest, till *Martimass* at 6 *per Cent*, : :	2	11	5			
		102	11	5	102	11	5

9 Voyage to London in the *Hind of Kinghorn*, *James Mariner* Master, Debtor to sundry Accompts 179 *l.* 1 *s.* for the following Goods and Charges paid thereon, consigned to Mr. *John Blackwood* Factor at *London*, to sell for my Account, *viz.*

		l.	s.				
	To Brandy for 56 Casks : :	156					
5,1	To Cash, paid for Freight and Charges at shipping : : : :	11	16				
	To Cash, paid to *Alexander Trusty*, as the *Præmium* of Insurance on the said Brandy, at 7½ *per Cent*, insured by him, according to Contract : :	11	5				
		179	1		179	1	

Ditto 21st,

3 Mr. David Johnston, Debtor to sundry Accompts, for
1,8 2 Butts Sack, which I this Day bought from *Richard Dick* for ready Money 30 *l.* and have immediately sold to *Ditto Johnston*

ston, (who is to receive it from *Ditto Dick*) for 34 *l.* payable in 5 Months;

	l.	l.	s.	d.
To Cash paid out for the Sack :	30			
To Profit and Loss gained by the Sale :	4			
	34	34		

Nota, It had been equal to have made Sack Debtor to Cash for 30 *l.* and then Mr. *Johnston* Debtor to Sack for 34 *l.* but having no Accompt of Sack as yet in the Leger, (and altho' there were) the other Way is shorter; if there had been Loss, then is Profit, *&c.* and Mr. *D. J.* Debtors to Cash each for their Share.

Voyage to Rochel, in the *Swan of Kirkaldy*, *David Fortune* Master, Debtor to sundry Accompts, 207 *l.* 16 *s.* 8 *d.* for the following Goods, consigned to *Daniel Straton* Factor at *Rochel* to sell for my Accompt, *viz.*

	l.	s.	d.	l.	s.	d.
8 To Herrings for 168 Barrels *Ditto*	126					
To Cash, paid this Day for 280 Yards white Plaiden : :	7					
7,6,3 To *James Montgomery* for 40 Barrels of Beef received this Day from him, payable in 1 Month, : :	60					
To Cash, paid Charges at shipping	4	16	8			
To Accompt of outstanding Charges; for the Freight owing to the Owners of *Ditto* Ship	10					
	207	16	8	207	16	8

Ditto 22d,

Bottomry-Accompt, Debtor to sundry Accompts 74 *l.* lent to *Thomas Speedwell* on his Ship, *The Mary of Borrowstounness* to be paid at her safe Arrival at *Lisbon* to *Cornelius Mandoli* my Factor there, *viz.*

	l.	l.
9 To Cash, for the Principal lent is	50	
1,8 To Profit and Loss, for my Risk	24	
	74	74

Wager-Accompt, Debtor to Cash, consigned in the Hands of *John Blackadder*, in a Wager against *John Ramsay*, That the *British* Parliament shall not be adjourned till the first of *July* next, (if then) : : 5

Ditto 25th,

Wooll, Debtor to ſundry Accompts, for 4 Packs *Ditto*, Number and Weight as under, bought and received from Mr. *James Truſtwell, viz.*

No. 1ſt, containing 18 *Stone*,
No. 2d, containing 22 *St.* 14 *Pound*,
No. 3d, containing 30 *St.*
No. 4th, containing 25 *St.* 10 *Pd.*

Total 96 8
3 allowed for Tare, being near ½ *Pound* to 1 *Stone*.
93 8 neat Weight at 10 *s.* 7 *d. per* Stone is 49 *l.* 9 *s.* 6 *d.* ½, Part paid, and Part owing, *viz.*

	l.	*s.*	*d.*
To Caſh, paid in Part :	19	9	½
To Figs, delivered in Part, 6 Barrels at 3 *l.* : :	18		
To *Ditto Truſtwell*, for the Remainder payable 1ſt *Auguſt*, :	12		
	49	9	6½

49 9 6½

Bottomry-Accompt, Debtor to ſundry Accompts, 50 *l.* lent to *Hercules Handy* on his Ship, *The Owner's Goodwill*, bound for *Stockholm* to be paid to me at her ſafe Return to *Leith, viz.*

	l.
To Caſh, Principal lent :	40
To Profit and Loſs for my Risk :	10
	50

50

Wager-Accompt, Debtor to Caſh, conſigned in the Hands of Mr. *Matthew St. Clare*, againſt *Thomas Murray*, upon a private Circumſtance to be determined by the ſaid Mr. *St. Clare*, 10

Ditto 28th,

Caſh, Debtor to Inſurance-Accompt, 45 *l.* received as the *Præmium*, on the Value of 300 *l.* inſured by me to Mr. *James Dickſon* in the *Grey-Hound of Leith*, bound for *Virginia*, 45

Sheeps Skins, Debtor to Caſh for 20 Packs *ditto* at 2 *l.* 13 *s.* 4 *d. per* Pack, : : : 53 6 8

July

July 2d,

Raisins, Debtor to Delivery-Accompt of buying, for 24 Barrels *ditto* received from Mr. *Andrew Cochran*, in Performance of our Bargain, which at 1 *l.* 19 *s.* is : : : 36

Ditto Cochran, Debtor to Cash, paid him the Remainder of the Price, : : : : : 20

Delivery-Accompt of buying, Debtor to *Daniel Trader*, for 100 Yards Holland at 5 *s. per* Yard, is 25 *l.* to be delivered to me, the 20th *July* instant, under the Penalty of 5 *l.* 25

Ditto 4th,

Voyage to *Bourdeaux*, in *The Success of Burntisland*, Mr. *Quintin Malcolm* Super-Cargo, Debtor to sundry Accompts 88 *l.* 17 *s.* 6½ for the following Goods, intrusted to the Management of *ditto Malcolm*, bound in the first Place for *Bourdeaux*, with a Power to him to carry them to any other Port of *France*, where he can make best Market, *viz.*

	l.					
To Salmond for 12 Barrel *ditto*	*l.* 27					
To Wooll for 4 Pack Weight neat, 93 $\frac{8}{112}$	49	9	6½			
To Cash paid of Freight and Charges	12	8				
	88	17	6½	88	17	6½

Profit and Loss, Debtor to Bottomry-Accompt, for as much as I am certainly advised, that *The Owner's Goodwill* is lost in her Way to *Stockholm*; on Bottomry of which I had lent to *Hercules Handy* 40 *l.* which with 10 *l.* Interest, is : 50

Ditto 10th,

Voyage to *Amsterdam* in the *Wild-Cat of Dysert*, *George Stirling* Master, Debtor to sundry Accompts, 66 *l.* 6 *s.* 8 *d.* for the following Goods, consigned to *Herman Van Rymer* Factor at *Amsterdam* to sell for my Accompt, *viz.*

	l.					
To Sheeps Skins for 20 Packs	*l.* 53	6	8			
To Cash, paid Charges at shipping	3					
To Iron, for 50 *St.* given to the Owners of the Ship for the Freight	10					
	66	6	8	66	6	8

Cash, Debtor to Insurance-Accompt, for 12 *l.* received as the *Præmium* for the Value of 100 *l.* insured by me to *David Lyon*, in the Ship *The Unicorn of Pittenweem*, bound for *Leghorn* 12 1

Ditto

		l.	s.	d.
	Ditto 12th,			
8 / 2	**Delivery-Accompt of Sales,** Debtor to **Raising** for 12 Barrels *ditto* formerly sold to *John Houston*, now delivered at 1 *l.* 15 *s.* 8 *d.* : : : :	23	3	8
5 / 2	**Ditto Houston,** Debtor to **Raising** for 6 Barrels more, sold and delivered to him, at the same Price, payable 2d *August* next, : : : :	10	14	
8 / 9	**Profit and Loss,** Debtor to **Wagers-Accompt,** having lost the Wager against *Thomas Murray*, this Day determined by Mr. *Matthew St. Clare*, my Consignation, : :	10		
1 / 8	**Cash,** Debtor to **Profit and Loss,** gained at *Leith* by a Wager upon a Horse-Race : : : :	15		
10 / 9	**John Blackwood** at *London*, my Accompt of Brandy, Debtor to **Voyage to London** in *The Hind of Kinghorn*, having Advice, that *ditto Blackwood* has received my 56 Cask of Brandy——	179	1	
	Ditto 15th,			
1 / 9	**Cash,** Debtor to **Wager-Accompt,** received from *John Blackadder* 10 *l.* gained in the Wager against *John Ramsay*, the Parliament not being adjourned : :	10		
	Ditto 16th,			
5 / 10	**Accepted Assignations,** Debtor to **Insurance-Accompt,** for as much as I have insured in *The Speedwell of Leith, Nicholas Armstrong* Master, bound for *Aleppo*, the Value of 600 *l.* at 15 *l. per Cent. Præmium*, for which I have an accepted Assignation on *Jeremy Thomson* payable in 7 Months : :	90		
10 / 9	**Cornelius Mandoll** Factor at *Lisbon*, my Accompt current, Debtor to **Bottomry-Accompt,** received by *ditto Mandoli* 222 *Milrees*, which at 6 *s.* 8 *d.* is 74 *l.* from *Thomas Speedwell* Master of the Ship *The Mary of Borrowstounness*, being the Principal and Interest lent by me on Bottomry of *ditto* Ship——	74		
	Ditto 20th,			
5 / 3	**Accepted Assignations,** Debtor to **Broad Cloth** for 2 Pieces *ditto*, containing 19 Yards each, at 16 *s. per* Yard, sold and delivered to Mr. *James Stevenson*, for which I have an accepted Assignation on *Gideon Keith*, payable in 20 Days——	28	16	

Ditto

Ditto 22d,

Daniel Trader, Debtor to ſundry Accompts; for as much as, I have required him to deliver me 100 Yards Holland formerly bought of him, which he fails to perform; therefore I charge him, *viz.*

		l.	s.	d.
5	To Delivery-Accompt of Buying for the Value of the ſaid 100 Yards	25		
8, 8	To Profit and Loſs for the Penalty, by Agreement	5		
		30	30	

John Blackwood Factor at *London*, my Accompt current
11 Debtor to *ditto Blackwood*, my Accompt of Brandy, for 20
10 Casks, which he adviſes me he has ſold for ready Money at 6 *l. per* Cask : : : : : : 120

Ditto 25th,

1 Caſh, Debtor to *Peter Chapman*, for 18 *French Lewid'ors*, which
5 I have taken from him, for Payment of 16 *l.* 6 *s.* he ow'd me 16 6

Wagers-Accompt, Debtor to Hazard-Accompt, for as much
9 as I have wagered on Parole 6 *l.* againſt *Simeon Wilfull*, that
10 there ſhall be no Peace concluded between *Sweden* and *Denmark* before 10th *Auguſt* next, : : : 6

Ditto 28th,

1 Caſh, Debtor to Profit and Loſs, gained 1 *l.* 5 *s.* on 18 *Lewid'ors*,
8 which coſt me 16 *l.* 6 *s.* and I have received for them 17 *l.* 11 *s.* gained, : : : 1 5

Nota, There needs certainly no more to be done in this Caſe, becauſe the *Lewid'ors* were ſtated to the Accompt of Caſh when received, and now Caſh is got for them, which is in effect as if no Caſh were received but the Gain; yet you may, if you pleaſe, make Caſh Debtor to Caſh for 16 *l.* 6 *s.* and to Profit, &c. for 1 *l.* 5 *s.*

Ditto 30th,

Inſurance-Accompt, Debtor to Caſh 80 *l.* for as much as
10 I have certain Advice, that *The Unicorn of Pittenweem* is caſt
1 away, and the Cargo loſt, in her Way to *Leghorn*, whereupon I had inſured the Value of 100 *l.* and have this Day paid to *Archibald Cockburn* 80 *l.* and he has diſcharged me — 80

Auguſt 1ſt,

1 Caſh, Debtor to Claret Wine for 10 Hhds. ſold for ready
2 Money at 12 *l. per* Hhd. : : 120

Broad-

		l.	s.	d.
3	Broad-Cloth, Debtor to Mr. *David Johnston* for 3 Pieces *ditto*, and received from him, payable 1st *October* next by my own Bill, *viz.*			
3		l.	s.	
	No. 1st, contains 25 Yards at 14 *s.* is	17	10	
	No. 2d, contains 30 Yards at 16 *s.* 8. *d.*	25		
	No. 3d, contains 18 Yards at 12 *s.*	10	16	
	In all 73 Yards. Value	53	6	53 6
	Ditto 3d,			
4/8	French Paper, Debtor to Delivery-Accompt of buying for 20 Bales *ditto* received, which I formerly bought from Mr. *William Wallace*, Value			76
2/4	Ditto Wallace, Debtor to *William Smith* for my Assignation on *ditto Smith*, payable to *ditto Wallace* on demand, in Part of the Paper,			6
8	Delivery-Accompt of Sales, Debtor to sundry Accompts 32 *l.* for as much as having formerly sold to *William Smith* 8 Bales of Paper, I have delivered him 6 Bales, which we are both content shall implement the Bargain; wherefore the Delivery-Accompt of Sales is Debtor, *viz.*	l.		
4, 4	To *French* Paper for 6 Bales delivered	24		
	To *ditto Smith*, to discharge him for 2 Bales retained	8		
		32		32
10	Voyage from *Bourdeaux* in *The Success of Burntisland*, Mr. *Quintin Malcolm* Super-Cargo, Debtor to Voyage to *Bourdeaux* in *ditto* Ship, for 7 Hhd. Claret Wine, loaded for me by *ditto Malcolm*, in Return of 12 Barrels of Salmond sold of mine for			
7	160 Crowns ready Money at 56 *d. per* Crown is 37 *l.* 6 *s.* 8 *d.* The rest of my Goods he advises me are safe.			37 6 8
	Ditto 5th,			
1	Cash, Debtor to sundry Accompts, *viz.* to *John Blackwood* Factor at *London*, my Accompt current for 100 *l.* the Contents of a Bill drawn by me on him, payable to *Christopher Higgins*, or Order, the Value received is	l.		
11, 8		100		
	Item, To Profit and Loss, received in Exchange	2		
		102		102

Ditto 8th, — l. s. d.

1 — Cash Debtor to *John Houston*, for 20 *Carolus*'s of Gold, which I have taken from him at 23 *s.* a piece to Accompt of
5 what he owes me, is — — — 23

Sundry Accompts Debtors to Cash 32 *l.* for as much as I have delivered the 20 *Carolus*'s of Gold got from *John Houston* at 23 *s.* a piece, to *Alexander Black* for 22 *s.* 6 *d.* is 22 *l.* 10 *s. Viz.*

		l.	*s.*	
6, 8	*Alexander Black* for the Value, at which I have delivered them to him. —	22	10	
1	Profit and Loss, for the Loss. —		10	
		23	00	23

N. B. Since this and the last Transaction are in one Day, you might all at once make *Alexander Black* Debtor to *John Houston*, for 22 *l.* 10 *s.* and Profit and Loss Debtor to ditto *Houston*, for 10 *s.* lost.

Herman Van Rymet my Accompt Sheep-Skins, Debtor to
11 Voyage to *Amsterdam*, in the *Wild-Cat* of *Dysert*, for 18 Packs
10 ditto, which he advises me he has received from aboard ditto Ship, (the remaining 2 Packs of 20, which I shipped, being lost at Sea); the whole Charge of the Voyage, I lay on the 18 Packs. — — — 63 6 8

N. B. It were the same to make Profit *&c.* Debtor to Voyage, for the Value of 2 Packs lost; and my Accompt of Sheeps-Skins, only for the proportional Value of 18 Packs.

11 — Ditto Rymet my Accompt current, Debtor to ditto my
11 Accompt Sheep-Skins, for 10 Packs, he advises me are sold for ready Money; the neat Proceeds whereof, deducing Charges and his Provision, is 436 $\frac{1}{2}$ *Guilders* at 22 *d.* is, — 40

N. B. It were the same, upon the whole of this Post, to have made sundry Accompts Debtors to the Voyage, *viz.* my Accompt current for the 10 Packs sold, and my Accompt Sheep Skins, for the Value of the 8 Packs remaining, proportional to the Charge of the whole Voyage; and if the Gain of the 10 Packs would make up the Loss of the two, then no more to be done; otherwise, make Profit *&c.* Debtor to the Voyage, for what the other two Articles came short of the Charge on the Debtors Side; but I have taken as easy a Way, tho' both agree to the general Rules.

Ditto 10th,

Daniel Stratton at *Rochel* my Accompt of Goods *per* the *Swan* of *Kirkaldie*, Debtor to Voyage to *Rochel* in the *Swan* of *Kirkaldie* for the following Goods; he advises me he has received from aboard ditto Ship, consigned to him, *viz.* 168 Barrels of Herrings, 40 Barrels of Beef, and 280 Yards white Plaiden, which with the Charges stated to the Voyage, is in all. — 207 16 8

Voyage from *Lisbon* in the *Red-Lyon* of *Leith*, *Matthew Steadman* Master, Debtor to *Cornelius Mandoli* Factor at *Lisbon*, my Accompt current, for 50 Barrels Raisins, he advises are shipp'd by my Order, and for my Account, which with all Charges cost 222 *Milrees*, at 6 *s.* 8 *d.* per *Milree*. — 74

Ditto 13th,

Wager-Accompt Debtor to Hazard-Accompt, wagered on a private Circumstance, against Mr. *John Justice*, to be determined by Mr. *John Mein*, the Hazard. — 10

Bottomry-Accompt Debtor to sundry Accomprs 80 *l.* for as much as I have lent to *Laurence Lovemoney*, on Bottomry of his Ship the *Falcon* of *Aberdeen*, lying in the Harbour of *Leith*, bound for *Genoa*, to be repaid to me, at his safe Return.

	l.	
To Cash for the principal Sum. —	60	
To Profit, *&c.* for my Risque. —	20	
	80	80

Ditto 14th,

Sundry Accompts Debtors to Holland, for 100 Yards ditto at 3 *s.* 8 *d.* is 18 *l.* 6 *s.* 8 *d.* delivered to Mr. *James Trustwell*, in Payment of what I owed him, he having paid me the Overplus, *viz.*

	l.	*s.*	*d.*
Ditto *Trustwell*, for my Debt to him.	12	00	00
Cash received as the Remainder.	06	06	08
	18	06	08

Cash Debtor to accepted Assignations; received from *Gideon Keith* Payment of *James Stevenson*'s Bill on him (the Accompt of Assignations being formerly charged.) — 28 16

Ditto 14th,

John Blackwood Factor at *London*, my Accompt current, Debtor to ditto my Accompt Brandy, for 36 Casks, which he advises me he has sold for ready Money; the neat Proceeds whereof, is. — — — 200

Ditto 15th,

		l.	s.	d.
11	Herman Van Rymer Factor at *Amsterdam*, my Accompt current, Debtor to ditto my Accompt of Sheep-Skins, for 8 Packs,, which he advises me, he has sold for ready Money; the neat Proceeds whereof by his Accompt, amounts to 400 *Guilders*, at 22 ½ *d. per Guilder*, is - -	37	10	
11 / 1	Cash Debtor to *John Blackwood* at *London*, my Accompt current for the Contents of a Bill of his Draught, on Mr. *Robert Blackwood* Merchant in *Edinburgh*, which I have instantly received. - -	20		

Ditto 16th,

12 / 1	Hero Moy of *Amsterdam* his Accompt of Goods, Debtor to Cash, paid of Charges at Receipt of the following Goods, consigned to me, which I received this Day from aboard a *Dutch* Brigantine, *viz.* - - - 8 Packs of *Flanders* Lint. 40 Dozens of Wooll Cards. 50 Pound Weight of *Bohea* Tea. } paid of Charges.	3	14	8
1 / 11	Cash, Debtor to *Herman Van Rymer* my Accompt current, received for 436 *Guilders* at 22 ½ *d. per Guilder*, contained in Bill drawn by me upon him, payable to *John Beaver*, or Order, upon Sight. - - -	40	8	5

Ditto 19th,

10 / 9	Hazard-Accompt, Debtor to Wager-Accompt, the Wager against Mr. *John Justice* being decided. - -	10		
9 / 1	Wager-Accompt, Debtor to Cash given Mr. *John Justice*, for my lost Wager. - -	10		
1 / 10	Hazard-Accompt, Debtor to Wager-Accompt, the Wager against *Simeon Wilfull* being decided. - -	6		
9 / 1	Cash, Debtor to Wagers Accompt, received of that Wager, decided in my Favours; there being no Peace yet concluded between *Sweden* and *Denmark*. - -	6		

Ditto 20th,

9 / 1	Cash, Debtor to *Hero Moy*'s Accompt of Goods, for 8 Packs of *Flanders* Lint, sold at 4 *l. per* Pack, is - -	32		
12 / 12 / 1	Hero Moy his Accompt current, Debtor to Cash paid, for the Contents of a Bill of *John Duncanson* on *Maurice Moliere*, payable to ditto *Moy*, at 10 Days Sight, being 208 $\frac{10}{33}$ *Guilder*, at 23 *d. per Guilder*. - -	20		

		l.	s.	d.
6, 6	Sundry Accompts, Debtors to *John Blackwood* my Accompt current, for so much as I have this Day, received from aboard a Barque of *Prestonpans*, the following Goods, (with the Bill of Loading, inclosed in his first Letter of Advice, concerning the same) which ditto *Blackwood* has sent me, by my Order, in Return of my Brandy, sold by him, *viz.*			
11	Muslins, for 400 Yards, at 5 *s.* *per* Yard.	100		
	Holland, for 166 ⅔ Yards at 6 *d.* in all.	50		
		150		
10	Ditto *Blackwood* my Accompt of Brandy is Debtor to my Accompt current, for Charges and Provision owing.	16	10	
		166	10	166 10
	Ditto 22d,			
12	Daniel Stratton at *Rochel* my Accompt of Sales, Debtor to ditto my Accompt of Goods *per Swan* of *Kirkaldie*, for 168 Barrels of Herring, which he advises me he has sold to sundry Persons on Time; the neat Proceeds whereof by his Accompt, amounts to 635 *Crowns*, at 56 ½ *d.* *per Crown*, is			149 9 9
8	Delivery Accompt of Buying, Debtor to *Thomas Dalziel*, for 100 Bolls Wheat, at 1 *l.* 10 *s.* the Boll, to be delivered 1st *November* next.			150
7	Ditto Dalziel, Debtor to Cash, advanced to him on the Bargain.			10
1	*Note*, The Remainder is payable, at *Martinmass.*			
3	Mr. Andrew Cothran, Debtor to *Herman Van Rymer*, my Accompt current, for a Bill drawn by me on ditto *Rymer*, payable to the Order of ditto *Cochran*, at single Usance; for the Value to be paid to me in one Month, being 400 *Guilders* at 22 ½ *per Guilder.*			
11				37 10 8
	Ditto 23d,			
5	Peter Chapman Debtor to *Hero Moy's* Accompt Goods, for 40 Dozen Wooll Cards, at 16 *s.* *per* Dozen, payable in 20 Days, is			
12				32
11	Daniel Stratton *at Rochel, my Accompt of Wooll*, Debtor to Voyage to Bourdeaux, in the *Success* of *Burntisland*, for 4			
7	Packs of Lint, which Mr. *Quintin Malcolm*, Super-Cargo, aboard ditto Ship, having taken first to *Bourdeaux*, and from that to *Rochel*, has consigned to ditto *Stratton* to sell for my Accompt; being ready himself to sail homewards; the Value			

lue of the Wooll as formerly charged, with a Part of the Expences, — l. 55 s. 9 d. 6⅓

Ditto 24th,

8 Profit and Loss Debtor to Voyage from Lisbon, in the *Red Lyon* of *Leith*, for 50 Barrels of Raisins were loaded for meby *Cornelius Mandoli*, and lost, the Ship and Cargo being cast away. — 74

10 *Ditto* 26th,

16 Charles Chareu at *Bourdeaux*, our Accompt of Exchange in Company, Debtor to Cash, 93 *l.* 6 *s.* 8 *d.* paid by me for a Bill of 400 *Crowns*, at 56 *d. per Crown*, remitted to ditto *Chareu*, drawn
1 by *Peter Stewart* on *Elias Morgan*, payable to ditto *Chareu*; for the Accompt of Exchange, we have agreed to keep betwixt us, conform to his Letter of Advice. — — — 93 6 8

14 House in —— Land near the *Canongate* Head, Debtor to Mr. John Campbel: for as much as I have bought from him, the 5th Story of ditto Land, for 300 *l.* and am obliged be-
14 sides for Payment of an yearly Annuity of 3 *l.* during the Life of his Mother, and for her Behoof, to be paid quarterly, *viz.*

	l.	*s.*
The Price of the House, payable in one Year.	300	
The first Quarters Payment of the Annuity at *Martinmass* next. — —		15
	300	15

300 15

William Davidson Debtor to ditto House, for one Years Rent thereof, from *Whitsunday* last, payable at two Terms,
14 *Martinmass* and *Whitsunday*, in equal Halfs; to the whole Years Rent from *Whitsunday* I am assigned. — — 20

14 *Ditto* 29th,

House in the Castle-Hill, Debtor to sundry Accompts, left me in Legacy, by *D. M.* my Uncle, *viz.* *l.*

14 To Profit and Loss, for the Value of the House, after the following Legacy is paid. } 200

8, 4 To Mr. *Thomas Richman*, for a Legacy I am obliged to pay. — — — } 30

230 230

15 Ship, the Dragon of Queensferry my ¼, Debtor to *Thomas Dalziel* for ¼ Part of ditto Ship, now lying in the Har-
7 bour of *Leith*, bought from him, payable at *Candlemass* next. 100

15 Mr. James Murray Debtor to Ship, the Dragon of Queensferry, for ⅛ of the Freight of her Voyage to *Stockholm*, whe-
15 ther she is bound, to which I am assigned by *Thomas Dalziel*. 10

Ditto 30th,

		l.	s.	d.
	Ditto 30th,			
15	Benjamin Bartlay my Accompt with him in Company, each ½, Debtor to Cash, 20 *l.* given him as my Share of a			
1	Stock in Partnership betwixt us to be managed by him for both our Accompts upon an Inland Trade, he being allowed 10 *per Cent.* for his Commission, : :	20	1	10
15	Mr. Robert Blackwood, Debtor to *John Blackwood* at *London* my Accompt current, for a Bill of his on the said Mr. *Robert*, in 1 Month,	33	10	
	September 2d,			
12	Hew Moy his Accompt current, Debtor to sundry Accompts for the following Goods shipped aboard the *Rose* of *Kinghorn*, *J. C.* Master by Order of *ditto Moy*, and for his Accompt, *viz.*			
1, 8	To Cash paid for 4 Packs of Sheep Skins,	12		
	To Cash paid of Charges at buying and shipping,	2	15	
	To Profit and Loss for my Provision, : :	1	5	
		15	10	15 10
3	Mr. Andrew Cochran, Debtor to Profit and Loss, for as much as he is obliged as Executor to ——— to pay me of Legacy in 3 Months, : :	50		
1, 15	Sundry Accompts, Debtors to Profit and Loss, for as much as I have taken *John Blackadder* Son to Mr. *Adam Blackadder*, for Apprentice for 3 Years, to have 70 *l.* for his Maintenance and Education, whereof Part is paid, *viz.*	*li.*		
	Cash paid,	20		
8	Mr. *Adam Blackadder* for the rest payable in 1 Year,	50		
		70		70
	Ditto 5th,			
1	Cash, Debtor to *Charles Charew* our Accompt of Exchange ½ in Company, 48 *l.* 6 *s.* 8 *d.* being 200 Crowns at 58 *d.* contained in a Bill remitted to me by *ditto Charew*, the Draught of			
16	*Allan Bruyere* on *Andrew Dick* payable on Sight :	48	6	8
	Ditto 6th,			
3	Accompt of out-standing Charges, Debtor to Cash, paid the Owners of the Ship the *Swan* of *Kirkaldy*, what I owed for Freight, (the Accompt of out-standing Charges being formerly Creditor.)	10		

Claret

Claret Wine, Debtor to ſundry Accompts, received 7 Hhds. ditto out of the Ship the *Succeſs* of *Burntiſland* arrived from *Bourdeaux*, which Mr. *Quintin Malcolm* my Super-Cargo for that Voyage laded for me at *Bourdeaux* in Return of my Salmond ſold by him there, *viz.* l. s. d. l. s. d.

2 | 10, 1 | To Voyage from Bourdeaux in the *Succeſs* of *Burntiſland*, for the 7 Hhds. as charged — 37 6
To Caſh, paid of Charges here : 5 10 8
42 16 8 | 42 16 8

— *Ditto* 7th, —

Hezo Hoy his Accompt Goods, Debtor to ſundry Accompts, for as much as I have by his Order ſhipped in the *Unicorn* of *Leith* for *London*, 50 Pound Weight of *Bohea* Tea formerly conſigned to me, now conſigned to *Evander L'Eſtrange* Factor at *London*, *viz.* l. s. d.

12 | 1, 8 | To Caſh, for Charges paid by me at ſundry Times, ſince his Goods (which are all out of my Hands) have been in my Cuſtody, beſide what was charged at firſt Receipt — 4 14 8
To Profit, *&c.* for my Proviſion on his whole Accompt of Goods : : 12
16 14 8 | 16 14 8

2 | 1 | **Claret Wine**, Debtor to **Caſh**, paid for 15 Gallons to fill up the 7 Hhd. that came from *Bourdeaux*, : 3

N. B. The 15 Gallons is not ſet down in the Quantity Column of the LEGER Accompt; becauſe 'tis only to fill up the Inlake of what once was.

Chriſtianus Wubach at **Rotterdam** his Accompt current, Debtor to ſundry Accompts, bought by his Order, and for his Accompt, the following Goods to be ſent to him with the firſt Occaſion, *viz.* l. s. d.

16 | 15, 1, 7, 8 | To **Edward St. Bonnet** Stocking-maker, 200 Pair coarſe Stockings, payable in 4 Mon. 50
To **Caſh** paid in Part of 700 Yard coarſe Linnen : : : 7 10
To **Thomas Dalziel** for the Remainder of the Linnen in 2 Months, : 10
To **Caſh** paid of Charges : : 18
To **Profit**, *&c.* for my Proviſion : 6
74 8 | 74 8

Nota, I might have entered theſe Goods in my Books, and then diſcharged them by my Employer's Accompt, but it would be

be very idle; and observe, that, following the Method I have taken, if by some Accident it fall out that he is content not to have them, and I to keep them, then I charge them to his Accompt current. l. s. d.

Ditto 10th,

15 Mr. James Murray, Debtor to *Charles Chareu*, our Accompt of Exchange ½ in Company, for 500 Crowns at 57 ½ *d. per* Crown, drawn by me on *ditto Chareu*, payable at single Usance
16 to *Anthony Van Helm*, or Order, for the Value to be paid to me in 1 Month by *ditto Murray*, : : 119 15 10

Daniel Stratton at *Rochel* my Accompt current, Debtor to
12 ditto my Accompt Sales, he having advised me, that he has received Payment of the Debts owing for my Herrings, being
12 635 Crowns at 56 ½ : : : : 149 9 9½

Ditto 11th,

Voyage from Amsterdam in the *Lamb* of *Cockeny*, Debtor to *Herman Van Rymer* my Accompt current, for the following
14 Goods shipped by him for my Accompt, and by my Order, in *ditto* Ship. l. s. d.

11 *viz.* 100 Pound Weight of Coffee 49
74 Pound Weight of Cinnamon : 37
His Charges and Provision : : 8 16 9

Being 981 Guilders at 21 *d. per* Guilder 85 16 9 85 16 9

Ditto 13th,

1 Cash, Debtor to *Peter Chapman*, paid me what he owed for
5 *Hero Moy's* Accompt of Goods : : 32

Hero Moy's Accompt Goods, Debtor to ditto his Accompt
12 current, for the neat Ballance of his Accompt of Goods, which
12 are all disposed of, and the Money all in my Hands 43 10 8

Christianus Marbach at Rotterdam, his Accompt current,
Debtor to Cash, paid for the Freight and other Charges at
16 shipping aboard the *Mer-maid* of *Borrowstounness*, *Magnus Black* Master, the Stockings and Linnen bought the 7th instant, for
1 Accompt of *ditto Marbach*, : : : 6

Wagers-Accompt, Debtor to Cash 10 *l.* consigned in the
9 Hands of Mr. *Gabriel Bowman*, against *Thomas Arrowsmith*, that the Ship called the *Crocodile* of *Leith*, now at *Virginia*,
1 shall not be home before 1st *November* next, : 10

Ditto 15th,

1 Mr. David Johnston, Debtor to Mr. *Robert Blackwood* for a
15 Bill of *ditto Blackwood* on *ditto Johnston*, payable on Demand 33 10

		l.	s.	d.
6	James Montgomery Debtor to Iron, for 500 Stone ditto, at 3 *s. per* Stone, delivered to him in Payment, of what I			
6	owe him for Beef. - - - -	75		
1	Cash Debtor to *James Montgomery*, for the Overplus of the			
6	Iron, more than paid my Debt. - - -	15		
	N. B. It had been the same to have made sundry Accompts Debtor to Iron, *viz. James Montgomery* for 60 *l.* and Cash for 15 *l.*			
	Ditto 18th,			
15	Benjamin Barclay my Accompt with him ½ in Company,			
6	Debtor to *Alexander Black* 10 *l.* for ditto *Barclay*'s Bill on me, to ditto *Black*, payable in 2 Months; for as much as ditto *Barclay* advises me, that he has bought for the Accompt in Company betwixt us, several Goods to the Value of 60 *l.* whereof my ½ is 30; of which he has already 20 *l.* and has drawn the foresaid Bill for the rest, which Bill I have accepted.	10		
12	Daniel Stratton at Rochel my Accompt current, Debtor to			
12	ditto Stratton my Accompt of Goods *per Swan* of *Kirkaldy*, for 40 Barrels of Beef, which he advises me he has sold for my Account for ready Money; the neat Proceeds whereof, amounts to 336 *Crowns*, at 57 *d.*	79	16	
15	Voyage from *Rochel* to Amsterdam, in the *Fortune* of St. *Martines*, Debtor to sundry Accompts; for as much as *Daniel Stratton* at *Rochel* has advised me, that by my Order he has			
11,	shipped aboard ditto Ship for *Amsterdam*, consigned to *Herman*			
12	*Van Rymer*, my 4 Packs of Wooll, lying in the Hands of ditto *Stratton*, *viz.*			
		l.	*s.*	*d.*
	To *Dan. Stratton* my Accompt of Wooll, for the 4 Packs, as they stand already charged.	55	09	6½
	To *Ditto my Accompt current*, paid out of Charges, and his Provision; 6 *Crowns* at 57 *d.* is	1	08	06
		56	18	0½
		56	18	0½
	Ditto 20th,			
1	Cash Debtor to Holland, for 66 ½ Yards, sold and delivered			
6	to a Stranger, for - - - -	26	8	
1	Cash Debtor to *John Houston*; received in Payment of his			
5	Accompt. - - - -	3	14	

Ditto

		l.	s.	d.
14	*September* 22d, 1717.			
15	**Charles Chareu** our Accompt of Exchange ½ in Company, Debtor to Mr. *Robert Blackwood*, for the Contents of a Bill drawn by ditto *Chareu* on me, for our Accompt of Exchange, payable at ſingle Uſance, to ditto *Blackwood*, *viz.* 300 *Crowns* at 57 *d.* is - - - - -	71	5	
14	**Voyage from Amſterdam** in the *Lamb* of *Cockeny*, Debtor to **Caſh**, paid of Charges at Arrival of the ſaid Ship, out of which I have received the following Goods, formerly ſhipt for me by *Herman Van Rymer*, the Charges paid. - -		5	
1	Received 100 Pound Weight of Coffee, worth in *Holland* by my Factors Accompt. -	40		
	74 Pound Weight Cinnamon, charged -	37		
	The Charges and Proviſion to my Factor, charged to the Voyage. - -	8 16 9		
	The Total of the firſt Charge of the Voyage.	85 16 9		
11, 15	**Sundry Accompts** Debtors to **Voyage from Amſterdam**, *&c. viz.*	*l.*		
	Cinnamon for 74 Pound, which with a Share of the Charges in *Holland* and here, I value at -	43		
14	Mr. *Adam Blackadder* for 100 Pound Coffee, immediately ſold and delivered to him, at 12 *s. per* Pound, payable in 6 Months, by his Bill. -	60		
		103	103	

N. B. The Voyage will here be Creditor, for more than it was charged by the Gain on the 100 Pound Coffee, which is immediately ſold; for it was needleſs to enter the Accompt Coffee in the Leger, ſince 'tis preſently diſpoſed; but if it had been done, it would be Debtor to Voyage for 47 *l.* 16 *s.* 19 *d.* and Mr. *Blackadder* Debtor to Coffee, for 60 *l.*

Ditto 25th,

11	**Herman Van Rymer** Factor at *Amſterdam*, my Accompt current, Debtor to *Daniel Stratton* at *Rochel* my Acccompt current; for as much as I am adviſed by ditto *Rymer*, that he hath drawn on ditto *Stratton*, for my Accompt 180 *Crowns*, which at 56 *d.* is 42 *l.* for which he has received 458 ½ *Guilders*, at 22 *d.* is alſo 42 *l.* - - -	42	1	
12	**Sundry Accompts** Debtors to *Daniel Stratton* at *Rochel* my Accompt currenr, drawn by me on him 100 *Crowns*, at 57 *d. per Crown*, is 23 *l.* 13 *s.* 4 *d.* payable at Sight to *David*			

		Broomfield or Order, for which I have received, *viz.*				*l.*	*s.*	*d.*
3, 1		Blood Cloth, for 2 Pieces containing 16 Yards each, at 10 *s.* *per* Yard.				8	16	
12		Cash.				7	13	4
						23	13	4
							23	13	4

Sundry Accompts Debtors to *Benjamin Barclay*, my Accompt ½ with him in Company; for as much as he has sold all the Goods in Partnership betwixt us, and for my Share of Stock and Gain, has given me, *viz.*

1, 6						*l.*		
		Cash.				25		
15		Iron, 100 Stone, at 3 *s.* *per* Stone.				15		
						40		
							40	

12		His Hoy his Accompt current, Debtor to Cash, paid the Contents of a Bill drawn on me by him, to Mr. *Robert Clark*,					8	8
1								

October 1st,

3		Accompt of out-standing Charges, Debtor to Cash, paid the Custom-house of *Leith*, what I owed for Duty on Wine					40	
1								

Ditto 5th,

Sundry Accompts, Debtors to *Christianus Marbach* at *Rotterdam* his Accompt current, for the following Goods and Bills sent me by my Order, in Return of what he owes me by his Accompt current, which I have this Day received out of the *Mer-maid* of *Borrowstounness*, (with the first Advice concerning them) *viz.*

6, 14						*l.*	*s.*	
12		Holland, for 100 Yards : : :				20		
12		Lint, for 4 Packs, 18 *Stone* each :				36		
		George Gordon by *ditto Marbach's* Bill, payable to me in 2 Months, accepted :				24	08	
						80	08	
							80	8

Sundry Accompts, Debtors to Cash, paid of Charges at Receipt of the foresaid Goods, *viz.*

6, 14						*l.*	*s.*	
		Holland, for : : :				1	13	
1		Lint, for : : :				2	19	
						4	12	
							4	12

Sundry

		l.	s.	d.	l.	s.	d.
1, 8	Sundry Accompts, Debtors to *Abraham Fairholm*, paid me what he owed for Holland, *viz.*						
	Cash, received : : : : :	24	00	00			
	Profit, *&c.* rebated him : : :	2	00	06			
7	: : : : :	26	00	06	26		6

Ditto 7th,

16	General Accompt of Charges of Merchandize, Debtor to Cash, paid out for several Charges since 1st *May* last (not charged to particular Accompts) as appears by my Book of						
1	Charges of Merchandize, : : :					20	
16	General Accompt of Houshold Expences Debtor to Cash, given out since 1st of *May* last, as appears by my Book of						
1	Houshold Expences : : :					30	
16	General Accompt of Houshold Expences, Debtor to Accompt for Houshold Expences out-standing, owing to sundry						
16	Persons, by my Book of Houshold Expences :					15	

Follows the LEGER, N^o. I. *transported in* Form *from the foresaid* JOURNAL.

1717		Stock, Debtor.		l.	s.	d.
May	1	To Mr. *David Johnston*	3	120		
		To Mr. *James Truſtwell*	4	60		
		To Accompt of outſtanding Charges (owing to the Cuſtom-Houſe of *Leith*)	3	40		
		To Mr. *Thomas Richman*	4	15		
		To Mr. *Andrew Coupar*	4	10		
		Total of my Debts		245		
Octr.	12	To Balance for my preſent free Eſtate	18	2382	19	3½
		Summa		2627	19	3½

1717		Caſh, Debt.				
May	1	To Stock then in Hand		800		
	2	To Claret Wine	2	84		
	6	To *French* Paper	4	10		
	8	To Raiſins	2	8		
	11	To broad Cloth	3	38	16	
	14	To Tobacco	2	14	2	
	20	To Tobacco	2	2		
	24	To *Daniel Trader*	5	20		
	30	To Iron	6	60		
June	7	To *John Houſton*	5	13	3	8
		To accepted Aſſignations	5	6		
	12	To *William Smith*	4	13	5	
	15	To Figs	7	15		
	17	To Mr. *Andrew Coupar*	4	19	12	
	28	To Inſurance-Accompt	10	45		
July	10	To Inſurance-Accompt	10	12		
	12	To Profit and Loſs	8	15		
	15	To Wagers Accompt	9	10		
	25	To *Peter Chapman* for 18 *Lewid'ors*, taken for	5	16	6	
	28	To Profit and Loſs gained on the 18 *Lewid'ors*	8	1	5	
Aug.	1	To Claret Wine	2	120		
	5	To *John Blackwood* my Accompt current	11	100		
		To Profit and Loſs	8	2		
		Tranſported to *Folio*	13	1425	9	8

		Stock, Creditor.		l.	s.	d.
1717						
May	1	By Cash		800		
		By Accompt of Claret Wine	2	160		
		By Accompt of Tobacco	2	208	8	
		By Accompt of Raisins	2	48		
		By Accompt of broad Cloth	3	212	16	
		By Mr. *William Wallace*	2	103	15	
		By Mr. *Andrew Hunter*	3	80		
		By Mr. *Andrew Cochran*	3	140		
		By Moveables and Houshold Furniture	3	200		
		Total of my Effects, or gross Estate		1952	19	
Octr.	8	By Profit and Loss for my neat Gain, since *May* 1st	17	675		$3\frac{1}{2}$
		Summa		2627	19	$3\frac{1}{2}$

		Cash, Credit.		l.	s.	d.
1717						
May	6	By Brandy	5	16		
	8	By Brandy	5	60		
	14	By Herrings	7	60		
	20	By Linnen	7	15		
	24	By Mr. *James Trustwell*	4	60		
	30	By Figs	7	35	4	
	—	By *James Montgomery*	6	18	8	
July	3	By Iron	6	32	10	
	—	By Mr. *Andrew Cochran*	3	16		
	6	By Mr. *David Johnston*	3	103		
	10	By *Peter Chapman*	5	3	12	
	18	By Mr. *Andrew Hunter*	3	100		
	—	By Voyage to *London*, &c. for Charges and Insurance	9	23	1	
	21	By Voyage to *Rochel*, &c. for Goods and Charges	8	11	16	8
	—	By Mr. *David Johnston*	3	30		
	22	By Bottomry-Accompt	9	50		
	—	By Wagers Accompt	9	5		
	25	By Wooll	9	19	9	$6\frac{1}{2}$
	—	By Bottomry-Accompt	9	40		
	—	By Wagers Accompt	9	10		
	28	By Sheep Skins	10	53	6	8
July	2	By Mr. *Andrew Cochran*	3	20		
	4	By Voyage to *Bourdeaux*, &c.	7	12	8	
	10	By Voyage to *Amsterdam*, &c.	10	3		
	30	By Insurance-Accompt	10	80		
		Transported to *Folio*	13	877	15	$10\frac{1}{2}$

		Claret Wine, Debt.	Hhd.		l.	s.	d.
1717							
May	1	To Stock at 8 *s. per* Hhd.	20	1	160	1	
Sepr.	6	To Voyage from *Bourdeaux*	7	10	37	6	8
		To Cash for Charges at receiving them		1	5	10	
	7	To Cash for 15 Gallons to fill up the 7 Hhds.		1	3		
Octr.	8	To Profit and Loss		17	81	10	
		Summa	27		287	6	8

		Tobacco, Debt.	Hhd.				
1717							
May	1	To Stock 10000 Pound Weight, in all	18	1	208	8	

		Raisins, Debt.	Bar.				
1717							
May	1	To Stock at 1 *l.* 12 *s. per* Barrel, in all	30	1	48		
July	2	To Delivery Accompt of buying, at 1 *l.* 10 *s. p.* Barrel	24	8	36		
Octr.	8	To Profit and Loss		17	12	8	9
		Summa	54		96	8	9

		Mr. William Wallace, Debt.					
1717							
May	1	To Stock for 100 *l.* Principal, by Bond dated 1st *February* last, payable at *Martimass* next, Intereſt till then, at 5 *l. per Cent.* Total		1	103	15	
June	12	To Holland 100 Yards, advanced on the Bargain of Paper		6	20		
Aug.	3	To *William Smith* by my Aſſignation		4	6		
		Summa			129	15	

Claret Wine, Credit.

1717			Hhd.		l.	s.	d.
May	2	By Cash at 12 *l. per* Hhd.	7	1	84		
	7	By *Daniel Trader* at 12 *l.* 10 *s. per* Hhd.	3	5	37	10	
Aug.	1	By Cash at 12 *l. per* Hhd.	10	1	120		
Octr.	8	By Balance	7	18	45	16	8
		Summa	27		287	6	8

Tobacco, Credit.

1717			Hhd.		l.	s.	d.
May	14	By Cash at 4 *l.* 14 *s. per* Hhd.	3	1	14		
	20	By Cash in Part at 4 *l. per* Hhd.		1	2	2	
		By *John Houston*, for Figs received in Barter, and sold to him	2	5	7	12	
Octr.	8	By Balance	13	18	150	10	2
		By Profit and Loss		17	34	3	10
		Summa	18		208	8	

Rums, Credit.

1717			Bar.		l.	s.	d.
May	8	By Cash in Part		1	8		
		By accepted Assig. on *John Hutcheson* at 12 *l. p.* Bar.	10	5	6		
		By *John Houston* for the Remainder		5	6		
	11	By Salmond, at 1 *l.* 16 *s. per* Barrel	15	6	27		
July	12	By Delivery-Accompt of Sales to *John Houston* at 1 *l.* 15 *s.* 8 *d.*	13	8	23	3	8
		By *John Houston* delivered more at the same Rate	6	5	10	14	
Octr.	8	By Balance, remains undisposed	10	18	15	11	1
		Summa	54		96	8	9

Mr. William Mollare, Credit.

1717					l.	s.	d.
June	12	By Delivery-Accompt of buying for 20 Bales of Paper	8		76		
Octr.	8	By Balance due at *Martinmass* next		18	53	15	
		Summa			129	15	

1717		Broad Cloth, Debt.	Yards		l.	s.	d.
May	1	To Stock 14 Pieces, 19 Yards each, at 16 s. per Yard in all : : : :	266	1	212	16	
Aug.	1	To Mr. *David Johnston* 3 Pieces No. and Price as *per* Journal : : : :	73	3	53	6	
Sept.	25	To *Daniel Stratton* my Accompt current for 2 Pieces 16 Yards each, at 10 s. *per* Yard, in all :	32	12	16		
Octr.	8	To Profit and Loss : : :		17	29	6	4
		Summa	371		311	8	4

1717		Mr. Andrew Hunter, Debt.					
May	1	To Stock; the Ballance of an old Accompt on Demand		1	80		
June	18	To Cash for principal Sum payable at *Mart.* next *per* Bond			100		
		To Profit and Loss for Interest thereof till *Martinmas* at 6 *per Cent.* : : : :		17	2	11	5
		Summa			182	11	5

1717		Mr. Andrew Corbian, Debt.				
May	1	To Stock on Demand : : :		1	140	
June	3	To Cash advanced on the Bargain of Raisins :		1	16	
July	2	To Cash for the remainder of the Raisins, now delivered		1	20	
Aug.	22	To *Herman Van Rymer* my Accompt Current payable in one Month : : :		11	37	10
Sept.	2	To Profit and Loss for the Legacy left me by — payable in three Months : : :		13	50	
		Summa			263	10

1717		Moveables and Houshold Furniture Debt.				
May	1	To Stock as *per* particular Inventary thereof :		1	200	

1717		Mr. David Johnston Debt.				
June	6	To Cash for Payment of what I owe him :		1	103	
		To Profit and Loss for five Months Advance :		8	17	
June	21	To Cash given for Sack immediately sold to him :		1	30	
		To Profit and Loss on the Bargain payable in five Months		8	4	
Sept.	15	To Mr. *Robert Blackwood* by Assignation payable on Demand : : : : :		15	33	10
		Summa			187	10

1717		Accompt of outstanding Charges Debt.				
Sept.	6	To Cash, paid the Fraught of the Voyage to *Rochel*,		13	10	
Octr.	1	To Cash, paid the Custom-House of *Leith*, :		13	40	
		Summa			50	

Broad Cloth, Cred.

			Yards		*l.*	*s.*	*d.*
1717 *May* 2	By *William Smith* for two Pieces at 17 *s.* 6 *d. per* Yard		38	4	33	5	
11	By Cash in Part	} 6 Pieces at 17 *s.* 4 *d. per* Yard	114	1	38	16	
	By *Holland* for the rest			6	60		
June 10	By *Peter Chapman* 4 Pieces at 18 *s.* : :		76	5	68	8	
July 20	By accepted Assignation, *&c.* 2 Pieces at 16 *s.*		36	5	28	16	
Octr. 8	By Ballance 5 Pieces, containing in all :		107	18	82	3	4
		Summa	371		311	8	4

Mr. Andrew Hunter, Cred.

				l.	*s.*	*d.*
1717 *May* 6	By Brandy for my Bill on him : : :		5	80		
Octr. 8	By Ballance for principal and Interest due at *May* next per Bond : : : : : :	}	18	102	11	5
		Summa		182	11	5

Mr. Andrew Cochran, Cred.

				l.	*s.*	*d.*
1717 *May* 8	By Iron for my Bill on him to *Alexander Black* :		6	100		
14	By Herrings for my Bill to *James Montgomery* :		7	40		
June 3	By Delivery Accompt of buying for 24 Barrels Raisins		8	36		
Octr. 8	By Ballance due to me : : :		18	87	10	
		Summa		263	10	

Moveables and Houshold-Furniture Cred.

				l.	*s.*	*d.*
1717 *Octr.* 8	By Ballance : : : :		10	200		

Mr. David Johnston Cred.

				l.	*s.*	*d.*
1717 *May* 1	By Stock payable 1st *November* next :		1	120		
10	By Broad Cloth payable by my Bill 1 *October* next :		3	53	6	
Aug. *Octr* 8	By Ballance due to me : : :		18	14	4	
		Summa		187	10	

Accompt of outstanding Charges Cred.

				l.	*s.*	*d.*
1717 *May* 1	By Stock, owing the Custom-House of *Leith*, on Wine, payable 1st *October* next : : :	}	1	40		
June 21	By Voyage to *Rochel*, *&c.* owing of Feight to the Owners of the Ship : : : :	}	8	10		
		Summa		50		

	Mr. James Trotter, Debt.			l.	s.	d.
1717						
May 24	To Cash - - -			1 60		
Aug. 24	To Holland for Payment of what I owe him -			6 18	6	8
			Summa	78	6	8
	Mr. Thomas Richman, Debt.					
1717						
Octr. 8	To Balance, due at *Martinmas* next -			18 45		
	Mr. [illegible], Debt.					
1717						
May 2	To Broad Cloth, payable in two Months -			3 33	5	
June 15	To Delivery-Accompt of Sales, 8 Bales of Paper -			8 32		
			Summa	65	5	
	French Paper, Debt.	Bales				
1717						
May 4	To *Peter Chapman*, at 4 *l. per* Bale -	18		5 72		
Aug. 3	To Delivery-Accompt of buying, at 3 *l.* 16 *s. per* Bale	20		8 76		
Octr. 8	To Profit and Loss - -			17 19	4	6
		38	Summa	167	4	6
	Mr. Andrew Couper, Debt.					
1717						
June 15	To Figs by *Peter Chapman*'s Assignation, payable in 3 Month			7 20		
Octr. 8	To Balance due at *Martinmas* next -			18 10		
			Summa	30		
	John Paton, Debt.					
1717						
May 6	To *French* Paper payable in 20 Days -			15		
June 7	To *French* Paper, payable in 10 Months -			63	14	
			Summa	78	14	

1717		Mr. James Coultwell, Credit.			*l.*	*s.*	*d.*
May	1	By Stock *per* Accompt on Demand		1	60		
June	29	By Wooll, payable 1st *August*		9	12		
Aug.	11	By Cash given me as the Overplus of the Holland		13	6	6	8
		Summa			78	6	8
1717		Mr. Thomas Richman, Credit.					
May	1	By Stock owing him one Year's Rent of his House possest by me from *Martinmas* last		1	15		
Aug.	29	By House in Castle-hill, payable at *Martinmas* next		14	30		
		Summa			45		
1717		Mr. William Smith, Credit.					
June	12	By Figs, in Part of what he owes for broad Cloth		7	20		
		By Cash, for the Remainder		1	13	5	
	15	By *Daniel Trader*, for his Assignation, given on Advance of the Paper		5	18		
Aug.	3	By Delivery Accompt of Sales, for 2 Bales Paper not delivered		8	8		
		By Mr. *William Wallace*, for my Assignation on Demand		2	6		
		Summa			65	5	
1717		French Paper, Credit.	*Bales*				
May	6	By Cash paid in Part		1	10		
		By *John Paton* for the Remainder at 5 *l. per* Bale	5		15		
June	7	By *John Paton*, at 4 *l.* 18 *s. per* Bale	13		63	14	
Aug.	3	By Delivery Accompt of Sales, at 4 *l. per* Bale to *William Smith*	6	8	24		
Octr.	8	By Balance, remaining on Hand	14	18	54	10	6
			38		167	4	6
1717		Andrew Cowper, Credit.					
May	1	By Stock for one Year's Rent of Cellars at *Leith* from *Martimas* last		1	10		
June	17	By Cash, received in Payment of Mr. *Chapman's* Assignation		1	19	12	
		By Profit and Loss discompted for the Advance		8		8	
		Summa			30		
1717		John Paton, Credit.					
May	24	By *Alexander Black*, for an Assignation		6	15		
Octr.	8	By Balance due in 6 Months		18	63	14	
		Summa			78	14	

1717	Peter Chapman Debt.		*l.*	*s.*	*d.*
June 10	To Broad Cloth in Payment of what I ow'd him : :		3	68	8
	To Cash for the Remainder : : :		1	3	12
15	To Figs on Demand : : : :		7	16	6
Aug. 22	To *Hero Moy's* Accompt of Goods, payable in 20 Days		12	32	
	Summa			120	6

1717	Brandy Debt.	*Casks*			
May 6	To Cash paid in part at 3 *l. per* Cask: :	1		16	
	To *Andrew Hunter* for my Bill on him for the rest	32	3	80	
8	To Cash at 2 *l.* 10 *s. per* Cask : :	24	1	60	
	Summa	56		156	

1717	Daniel Trader Debt.			
May 7	To Claret Wine, for a Bill on him accepted on Demand	2	37	10
June 15	To *William Smith*, for his Assignation on Demand :	4	18	
July 22	To Delivery Accompt of buying, not performed :	8	25	
	To Profit and Loss for the Penalty, having failed to deliver the *Hollands* : : :	8	5	
	Summa		85	10

1717	John Houston, Debt.			
May 8	To Raisins, payable in 2 Months : :	2	6	
20	To Tobacco, for Figs received in Barter and sold to him immediately, *viz.* 4 Barrels of Figs at 1 *l.* 18 *s. per* Barrel on Demand : :	2	7	12
June 7	To Delivery Accompt of Sales, 13 Barrels of Raisins :	8	23	3 8
July 11	To Raisins, payable 2d *August* next : :	2	10	14
	Summa		47	5 8

1717	Accepted Assignations, Debt.			
May 8	To Raisins, for *John Houston's* Assignation on *John Hutcheson* payable in 10 Days : :	2	6	
July 16	To Insurance Accompt payable by *Jeremy Thomson* in 7 Months : : : :	10	90	
20	To Broad Cloth, for *James Stevenson's* Assignation on *Gideon Keith*, in 20 Days : : :	3	28	16
	Summa		124	16

Peter Chapman, Cred.

						l.	*s.*
1717							
May	4	By French Paper, payable in one Month	-	-	4	72	
July	5	By Cash, for 18 *Leuid'ores* taken for Payment of	-		1	16	6
Sept.	13	By Cash, for what he ow'd for *Hero Moy*'s Accompt of Goods	- - - - - -		13	32	
				Summa		120	6

Brandy, Cred.

					Casks		
1717							
June	18	By Voyage to *London*, &c.			56	9	156

Daniel Craver, Cred.

1717							
May	24	By Cash paid me	- - - - - -		1	20	
June	3	By Iron	- - - - -		6	17	10
July	2	By Delivery Accompt of Buying, for 100 Yards Holland Value	- - - - - -		8	25	
Octr.	8	By Ballance due upon Demand	- -		18	23	
				Summa		85	10

John Houston, Cred.

1717							
May	30	By *James Montgomery*, for my Assignation	- -		6	7	12
June	7	By Cash advanced me on the Bargain of Raisins	-		1	13	3 8
Aug.	8	By Cash, received 20 *Carolus*'s at 23 *s. per* Piece	-		13	23	
Sept.	20	By Cash	- - - - - - -		13	3	14
				Summa		47	9 8

Accepted Assignations, Cred.

1717							
June	7	By Cash, from *John Hutcheson*	- - -		1	6	
Aug.	14	By Cash, from *Gideon Keith*	- - - -		13	28	16
Octr.	8	By Ballance due by *Jeremy Thomson* in 4 Months	-		18	90	
				Summa		124	16

1717		**Iron,** Debt.	Stone		*l.*	*s.*	*d.*
May	3	To Mr. *And. Cochran*, for my Bill in Part } at 3 *s. per Stone*	1000	3	100		
		To *Alexander Black*, for the Remainder }		6	56		
June	3	To Cash in Part } at 3 *s.* 4 *d. per* Stone	300	1	32	10	
		To *Daniel Trader* for the rest }		5	17	10	
Sept.	28	To *Benjamin Barclay*, my Accompt with him in Company }	100	15	15		
Octr.	8	To Profit and Loss		17	18	15	
		Summa	1400		233	15	
1717		**Alexander Black,** Debt.					
May	24	To *John Paton*, for an Assignation by ditto *Paton* on him on Demand }		4	15		
		To Profit and Loss, for the advance of 15 *l.* not due till 8 *August* }		8		2	8
Aug.	8	To Cash, for 20 *Carolus*'s at 22 *s.* 6 *d.* a piece, payable on demand, is }		13	22	10	
Octr.	8	To Ballance due to him		18	22	7	4
		Summa			60		
1717		**Holland,** Debt.	*Yards*				
May	11	To Broad Cloth, [at 4 *s. per* Yard	300	3	60		
Aug.	20	To *John Blackwood* my Accompt current, at 6 *s. per* Yard }	166⅔	11	50		
Octr.	5	To *Christianus Marbath*, his Accompt current, sent me	100	16	20		
		To Cash, paid Charges at receiving it		1	1	13	
	8	To Profit and Loss		17	5	17	
		Summa	566		137	10	
1717		**Muslins,** Debt.	*Yards*				
Aug.	20	To *John Blackwood*, my Accompt current, at 5 *s. per* Yard }	400	11	100		
1717		**Salmond,** Debt.	*Bar.*				
May	11	To Raisins, [at 2 *l.* 5 *s. per* Barrel	12	2	27		
1717		**James Montgomery,** Debt.					
May	30	To Cash, in part Payment		1	18	8	
		To *John Houston*, for my Assignation on him		5	7	12	
Sept.	15	To Iron		6	75		
		Summa			101		

Iron, Cred. *Stone*

1717							*l.*	*s.*	*d.*
May	20	By Linnen, at 3 *s.* 6 *d. per* Stone			200	7	35		
	30	By Cash, at 4 *s. per* Stone			300	1	60		
July	10	By Voyage to *Amsterdam*, &c. at 4 *s. per* Stone			50	10	10		
Sept.	15	By *James Montgomery*, at 3 *s. per* Stone			500	6	75		
Octr.	8	By Ballance, remains on Hand			350	18	53	15	
				Summa	1400		233	15	

Alexander Black, Cred.

1717							*l.*	*s.*	*d.*
May	8	By Iron payable in 3 Months				6	50		
Sept.	18	By *Benjamin Barclay* my Accompt with him in Company payable in 3 Months				15	10		
				Summa			60		

Holland, Cred. *Yards*

1717							*l.*	*s.*	*d.*
May	11	By *Abraham Fairholm*, at 5 *s.* 3 *d. per* Yard			100	7	26	5	
June	10	By Mr. *William Wallace*, at 4 *s. per* Yard			100	2	20		
Aug.	14	By Mr. *James Trustwell*, at 3 *s.* 8 *d. per* Yard			100	4	18	6	8
Sept.	18	By Cash			66	13	26	8	
Octr.	8	By Ballance, remains on Hand			200	18	46	10	4
				Summa	566		137	10	

Mulline, Cred. *Yards*

1717							*l.*	*s.*	*d.*
Octr.	8	By Ballance remains on Hand			400	18	100		

Salmond, Cred. *Bar.*

1717							*l.*	*s.*	*d.*
July	4	By Voyage to *Bourdeaux*, &c.			12	7	27		

James Montgomery, Cred.

1717							*l.*	*s.*	*d.*
May	14	By Herrings, payable on Demand				7	26		
June	21	By Voyage to *Rochel*, &c. for 40 Barrels of Beef payable in one Month				8	60		
Sept.	15	By Cash received as the overplus of the Iron				13	15		
				Summa			101		

Voyage to Bourdeaux in the Succeſs of Burntiſland, *Quintin Malcolm* Supercargo. } Debt. l. s. d.

1717
July 4 To Salmond, for 12 Barrels - - - 6 27
To Wooll, ſcr 4 Pack weighing neat 93 Stone 2 Pound 9 49 9 6½
To Caſh, paid Freight and Charges at Shipping - 1 12 8
Octr. 8 To Profit and Loſs - - - - 17 3 18 8

Summa 92 16 2½

1717 Abraham Fairholm, Debt.
May 11 To Holland, payable in 5 Months - - 6 26 5

1717 Account of Herrings, Debt. Bar.
May 14 To Caſh in Part } at 15 *s. per* Barrel, 1 60
To *Andrew Cochran* for my Bill } cured with *Spaniſh* 168
Salt. 3 40
To *James Montgomery* for the Remainder - 6 26

Summa 168 126

1717 Figs, Debt. Bar.
May 30 To Caſh, at 2 *l.* 4 *s. per* Barrel - - 16 1 35 4
June 12 To *William Smith*, at 2 *l.* 10 *s. per* Barrel - 8 4 20
Octr. 8 To Profit and Loſs - - 17 14 2

Summa 24 69 6

1717 Linnen, Debt. Yards
May 20 To Caſh in Part } at 16 *d. per* Yard. 1 15
To Iron for the reſt } 750 6 35

Summa 750 50

1717 Thomas Dalziel, Debt.
Aug. 22 To Caſh, advanced on the Bargain of Wheat - 23 10
Octr. 8 To Ballance due to him - - 28 250

Summa 260

Voyage to Bourdeaux, &c. Credit.

1717						*l.*	*s.*	*d.*
Aug.	3	By Voyage from *Bourdeaux*, &c. my Goods being all safely arrived at *Bourdeaux*, and the 12 Barrels of *Salmond* all sold, for which there is Wine loaded to the Value of : : :	10		137	6	8
	23	By *Daniel Stratton* at *Rochel* my Accompt of Wooll, 4 Packs	11		55	9	6½
				Summa	92	16	2½

Abraham Fairholm, Credit.

1717						*l.*	*s.*	*d.*
Octr.	5	By Cash, : : : :	13		24			
		By Profit and Loss, rebated him : :	13		2	5		
				Summa	26	5		

Accompt of Herrings, Credit.

1717					*Bar.*			
June	21	By Voyage to *Rochel*, &c. : :	168	8	136			

Figs, Credit.

1717					*Bar.*			
June	15	By Cash in Part, :			1		15	
		By Mr. *Andrew Couper* for an Assignation in Part } at 2 *l.* 17 *s. per* Barrel	18			4	20	
		By *Peter Chapman* for the rest : :				5	16	6
	25	By Wooll— at 3 *l. per* Barrel : :	6		9	18		
				Summa	24		69	6

Linnen, Credit.

1717					*Yards*			
Octr.	8	By Ballance, remains on Hand, : :	750		18	50		

Thomas Daniel, Credit.

1717						*l.*	*s.*	*d.*
Aug.	22	By Delivery Accompt of buying, payable at *Martinmass*	8			150		
	29	By Ship, the *Dragon* of *Queensferry*, payable at *Martin.* next	15			100		
	7	By *Christianus Marbach*, his Accompt current, in 2 Months	16			10		
				Summa		260		

				l.	s.	d.
		Profit and Loss, Debt.				
1717						
June	17	To Mr. *Andrew Coupar*		4		8
July	4	To Bottomry-Accompt		9	50	
	12	To Wagers-Accompt		9	10	
Aug.	8	To Cash lost on 20 *Carolus's*		1		10
		Transported to *Folio*		13	60	18

				l.	s.	d.
		Delivery-Accompt of buying, Debt.				
1717						
June	3	To Mr. *Andrew Cochran*, for 24 Barrels Raisins, to be delivered to me the first of *July* next		3	36	
	12	To Mr. *William Wallace*, 20 Bales of *French* Paper, to be delivered first *August* next		2	76	
July	2	To *Daniel Trader*, for 100 Yards Holland, to be delivered to me 20th *July* instant, under Penalty of 5 *l.* Value		5	25	
Aug.	22	To *Thomas Dalziel*, for 100 Bolls Wheat, to be delivered to me the first of *November* next		7	150	
			Summa		287	

				l.	s.	d.
		Delivery-Accompt of Sales, Debt.				
1717						
July	12	To Raisins delivered to *John Houston* 13 Barrels		2	23	3 8
Aug.	3	To *French* Paper, for 6 Bales to *William Smith*		4	24	
		To *William Smith*, for 2 Bales not delivered, by Consent		4	8	
			Summa		55	3 8

				l.	s.	d.
		Voyage to Rochel, in the Swan of Kirkaldy, *David Fortune* Master Debt.				
1717						
June	21	To Herrings, for 168 Barrels		7	126	
		To Cash, paid this Day for 280 Yds. white Plaiden shipped		1	7	
		To *James Montgomery*, for 40 Barrels of Beef shipped		6	60	
		To Cash, paid Charges at shipping		1	4	16 8
		To Accompt of outstanding Charges, for Freight		3	10	
			Summa		207	16 8

		Profit and Loss, Credit.			*l.*	*s.*	*d.*
1717							
May	24	By *Alexander Black*	c			2	8
June	6	By Mr. *David Johnston*	3	17			
	18	By Mr. *Andrew Hunter*	3	2	11	5	
	21	By Mr. *David Johnston*	3	4			
	22	By Bottomry-Accompt	9	24			
	25	By Bottomry-Accompt	9	10			
July	12	By Cash, gained by a Wager at *Leith*	1	15			
	22	By *Daniel Trader*	5	5			
	28	By Cash, gained on 18 *Lewid'ors*, &c.	1	1	5		
Aug.	5	By Cash, gained on Exchange of a Bill drawn on *John Blackwood*	1	2			
	13	By Bottomry-Accompt	9	20			
		Transported to	13	108	19	1	
1717		**Delivery-Accompt of buying,**					
July	2	By Raisins, for 24 Barrels from *Andrew Cochran*	2	36			
	22	By *Daniel Trader*, for the 100 Yards of Holland not delivered	5	25			
Aug.	3	By *French* Paper, for 20 Bales from Mr. *William Wallace*	4	76			
Octr.	8	By Ballance, for 100 Bolls Wheat to be delivered me by *Thomas Dalziel* first of *November* next	18	150			
		Summa		287			
1717		**Delivery-Accompt of Sales,** Credit.					
June	7	By *John Houston*, for 13 Barrels of Raisins, to be delivered 10 *July* next	5	23	3	8	
	15	By *William Smith*, for 8 Bales of Paper, to be delivered 5th *August* next	4	32			
		Summa		55	3	8	
		Voyage to Rochel, in the Swan of Kirkaldy, *David Fortune* Master. Credit.					
Aug.	10	By *Daniel Stratton* my Accompt of Goods for the whole Cargo received	12	207	16	8	

					l.	s.	d.
		Voyage to London in the Hind of Kinghorn of *James Mariner* Master.	Debt.				
1717							
June	18	To Brandy, for 56 Casks shipped		5	156		
		To Cash, paid of Charges		1	11	16	
		To Cash, paid Insurance to *Alexander Trusty*		1	11	5	
			Summa		179	1	
		Bottomry-Accompt,	Debt.				
1717							
June	22	To Cash, lent *Thomas Speedwell*, on his Ship the *Mary* of *Borrowstounness*, bound for *Lisbon*, &c.		1	50		
		To Profit and Loss for the Interest		8	24		
	25	To Cash, lent *Hercules Handy*, on his Ship *The Owner's Goodwill*, bound for *Stockholm*, &c.		1	40		
		To Profit and Loss, for Interest		8	10		
Aug.	13	To Cash, lent *Laurence Lovemoney*, on his Ship the *Faulcon* of *Aberdeen*, bound for *Genoa*,		13	60		
		To Profit and Loss, for the Interest		13	20		
			Summa		204		
		Wagers Accompt,	Debt.				
1717							
June	22	To Cash, against *John Ramsay*		1	5		
	25	To Cash, against *Thomas Murray*		1	10		
July	25	To Hazard Accompt, on Parole, against *Simon Wilful*		10	6		
Aug.	13	To Hazard Accompt, on Parole, against Mr. *John Justice*		10	10		
	1	To Cash, given to *John Justice*, having lost the Wager		13	10		
Sept.	13	To Cash, against *Thomas Arrowsmith*		13	10		
Octr.	8	To Profit and Loss, for closing this Accompt		17	1		
			Summa		52		
		Wool,	Debt.	*Stone*			
1717							
July	25	To Cash, in Part	at 10 *s.* 7 *d.* per Stone, of 4 Packs, as per *Journal.*	neat 93 $\frac{9}{17}$	1	19	9 $6\frac{5}{17}$
		To Figs, given in Part			7	18	
		To Mr. *James Trustwell* for the Rem.			4	12	
			Summa	93 $\frac{9}{17}$		49	9 $6\frac{5}{17}$

	Voyage to London in the **Hind** of **Kingborn**, *James Mariner* Master, } Credit.			*l.*	*s.*	*d.*
1717 *July*	12	By *John Blackwood*, my Accompt of Brandy, *&c.*		10	179	1

	Borrowers-Accompt, Credit.				
1717 *July*	4	By Profit and Loss, *The Owner's Goodwill* being lost	8	50	
	16	By *Cornelius Mandoli*, my Accompt current, for what he has received from *Thomas Speedwell* :	10	74	
Octr.	8	By Balance, owing on the *Falcon* of *Aberdeen* :	18	80	
		Summa		204	

	Wagers-Accompt, Credit.				
1717 *July*	12	To Profit and Loss, the Wager against *Thomas Murray* being determined against me : : :	8	10	
		By Cash, gained the Wager against *John Ramsay*, and received	1	10	
Aug.	19	By Cash, gained the Wager against *Simon Wilful* :	13	6	
		By Hazard Accompt, for my Part of the Wager against *John Justice* determined : :	10	10	
		By Hazard Accompt, for my Part of the Wager against *Simon Wilful* determined : :	10	6	
Octr.	8	By Balance, for the Wager against *Thomas Arrowsmith* undecided : : : : :	18	10	
		Summa		52	

	Wool, Credit.		*Stone*				
1717 *July*	4	By Voyage to *Bourdeaux*, *&c.* : :	*93*	7	49	9	6½

				Pack		l.	s.	d.
1717		Sheeps Skins,	Debt.					
June	28	To Cash, at 2 *l.* 13 *s.* 4 *d. per* Pack		29	1	53	6	8
		Insurance Accompt,	Debt.					
July	30	To Cash, paid *David Lyon*, his Goods which I ensured being lost			1	80		
Octr.	8	To Profit and Loss			17	67		
			Summa			147		
1717		Hazard Accompt,	Debt.					
Aug.	19	To Wagers Accompt, the Wager against *John Justice* being decided			9	10		
		To Wagers Accompt, the Wager against *Simeon Wilfull* being decided			9	6		
			Summa			16		
		Voyage to Amsterdam, in the Wild-Cat of Dysert, *George Stirling* Master,	Debt.					
1717								
July	10	To Sheeps Skins, shipped 20 Packs, worth			10	53	6	8
		To Cash, paid of Charges at shipping			1	3		
		To Iron, given the Owners, for Payment of the Freight			6	10		
			Summa			66	6	8
		Voyage from Lisbon, in the Red Lyon of Leith,	Debt.					
1717								
Aug.	10	To *Cornelius Mandoli*, Factor at *Lisbon*, my Accompt current, for 50 Barrels of Raisins, shipped by my Order amounts to			10	74		
		John Blackwood Factor at London, my Accompt of Brandy, consigned to him,	Debt.					
1717								
July	12	To Voyage to *London*, &c. for my 56 Casks of Brandy, as the Voyage was charged, amounts to			9	179	1	
Aug.	20	To ditto my Accompt current, for Charges and Provision owing him			11	16	10	
Octr.	8	To Profit and Loss			1	124	9	
						320		
		Voyage from Bourdeaux in the Success of Burntisland, *Quintin Malcolm* Super-cargo.	Debt.					
1717								
Aug.	3	To Voyage to *Bourdeaux*, &c. for 7 Hhd. Claret Wine			7	37	6	8

					l.	*s.*	*d.*
1717		**Sheeps Skins,** Credit.	*Packs*				
July	4	By Voyage to *Amsterdam*, &c.	20	10	53	6	8
1717		**Insurance-Accompt,** Credit.					
June	28	By Cash, received from Mr. *James Dickson*, as *per* Journal		1	45		
July	10	By Cash, from *David Lyon* : :		1	12		
	16	By accepted Assignation on *Jeremy Thomson*, for *Nicholas Armstrong* : : :		5	90		
			Summa		147		
1717		**Hazard Accompt,** Credit.					
July	25	By Wagers Accompt, on Parole, against *Simon Wilful*		9	6		
Aug.	13	By Wagers Accompt, on Parole, against Mr. *John Justice*		9	10		
			Summa		16		
		Voyage to Amsterdam, in the Wild-Cat of Dysert, *George Stirling* Master, Credit.					
1717							
Aug.	8	By *Herman Van Rymer*, my Accompt of Sheep Skins, for 18 Packs received (the rest being lost) which I charge with the whole : : :		11	66	6	8
1717		**Voyage from Lisbon in the Red Lyon of Leith,** Credit.					
Aug.	24	By Profit and Loss, the Ship and Cargo being cast away		13	74		
		John Blackwood Factor at *London*, my Accompt of Brandy, consigned to him. Credit.					
1717							
July	22	By ditto my Accompt current, for 20 Casks sold for ready Money : : : :		11	120		
Aug.	14	By ditto my Accompt current, for 36 Casks sold for ready Money : : :			200		
			Summa		320		
1717		**Voyage from Bourdeaux, &c.** Credit.					
Sept.	6	By Claret Wine received, 7 Hhds. :		2	37	6	8

					l.	s.	d.
		Cornelius Mandoli Factor at *Lisbon*, my Accompt current,	Debt.	*Milrees*			
1717 *July*	16	To Bottomry-Accompt, at 6 *s.* 8 *d. per Milree*		222	9	74	
		John Blackwood at *London*, my Accompt current,	Debt.				
July	22	To ditto *Blackwood*, my Accompt of Brandy			10	120	
Aug.	14	To ditto, my Accompt of Brandy			10	200	
				Summa		320	
		Herman Van Rymer at *Amsterdam*, my Accompt current,	Debt.	*Guilders*			
1717 *Aug.*	8	To ditto my Accompt of Sheep Skins, at 22 *d. per Guilder*		436 $\frac{3}{11}$		40	
	15	To ditto my Accompt of Sheeps Skins, at 22 $\frac{1}{2}$ *per Guilder*		400		37	10
Sept.	25	To *Daniel Stratton* at *Rochel*, my Accompt current, at 22 *d. per Guilder*		458 $\frac{3}{11}$	12	42	
Octr.	8	To Balance due to him		522 $\frac{8}{11}$	18	44	5 2
				Summa 1817 $\frac{4}{11}$		163	15 2
		Herman Van Rymer at *Amsterdam*, my Accompt of Sheep Skins,	Debt.				
1717 *Aug.*	8	To Voyage to *Amsterdam*, &c. 18 Packs received			10	66	6 8
Octr.	8	To Profit and Loss			17	11	3 4
				Summa		77	10
		Daniel Stratton at *Rochel*, my Accompt of Wool,	Debt.				
1717 *Aug.*	23	To Voyage to *Bourdeaux*, &c. for 4 Packs left with him by Mr. *Quintin Malcolm*			7	55	9 6 $\frac{1}{2}$

Cornelius Mandoli at *Lisbon*, my Accompt current, } Credit.

					l.	*s.*	*d.*
1717			*Milrees*				
Aug.	10	By Voyage from *Lisbon*, in the *Red Lyon* of *Leith*, for 50 Barrels of Raisins at 6 *s.* 8 *d.* per *Milree*	222	10	74		

John Blackwood at *London*, my Accompt current, Credit.

1717						
Aug.	5	By Cash, the Contents of a Bill drawn on him, payable upon Sight	1		100	
	15	By Cash, the Contents of a Bill remitted to me	13		20	
	20	By Holland	6		50	
	—	By Musline	6		100	
	—	By ditto my Accompt of Brandy, for Charges and Provision	10		16	10
	30	By Mr. *Robert Blackwood*, for a Bill on him	15		33	10
		Summa			320	

Herman Van Rymer, my Accompt current, } Credit.

1717			*Guilders*				
Aug.	17	By Cash, for a Bill payable to *John Beaver* upon Sight, at 22¼ *per Guilder*	436 4/11	13	40	8	1
	22	By *Andrew Cochran*, for my Bill at 22½ *d. per Guilder*	400	3	37	10	
Sept.	11	By Voyage from *Amsterdam*, &c. at 21 *d. per Guilder*	981	10	85	16	9
		Summa	1817 4/11		163	15	2

Herman Van Rymer, my Accompt of Sheep Skins, } Credit.

1717					
Aug.	8	By ditto my Accompt current, for 10 Packs, sold for ready Money	—	40	
	15	By ditto my Accompt current, 8 Packs, sold for ready Money	—	37	10
		Summa		77	10

Daniel Stratton at *Rochel*, my Accompt of Woull, } Credit.

1717						
Sept.	8	By Voyage from *Rochel* to *Amsterdam*, 4 Packs	15		55	9 6½

1717		*Daniel Stratton* at *Rochel*, my Accompt of Goods *per* Swan of Kirkaldy.	Debt.			*l.*	*s.*	*d.*
Aug.	10	To Voyage to *Rothel*, &c. for 168 Barrels of Herrings, 40 Barrels of Beef, and 280 Yards of Plaiden received, Value			8	207	16	8
Octr.	8	To Profit and Loss			17	28	19	9½
				Summa		236	16	5½
1717		*Daniel Stratton* at *Rochel*, my Accompt of Sales,	Debt.	*Crowns*				
Aug.	22	To ditto my Accompt of Goods for 168 Barrels of Herrings, produce of which, is 635 Crowns, at 56½ *d.*		635		149	9	9½
1717		*Daniel Stratton*, my Accompt current,	Debt.	*Crowns*				
Sept.	10	To ditto my Accompt of Sales, at 65½ *per* Crown		635		149	9	9½
	18	To ditto my Accompt of Goods, *&c.* at 57 *d.* *per* Crown		336		79	16	
				Summa	971	229	5	9½
1717		*Hero Moy*, his Accompt of Goods,	Debt.					
Aug.	17	To Cash, paid Charges at the arrival of his Goods (V. Journal)			13	3	14	8
Sept.	7	To Cash, paid more Charges			13	4	14	8
		To Profit and Loss for Provision, all his Goods being out of my Hands (V. *September* 7th.)			13	12		
	13	To his Accompt current, for the neat Ballance			—	43	10	8
				Summa		64		
1717		*Hero Moy*, his Accompt current,	Debt.					
Aug.	20	To Cash, paid for a Bill remitted to him, 208$\frac{16}{33}$ *Guilders* at 33 *d. per* Guilder, the Draught of *John Duncanson* on *Maurice Moliere*, at 10 Days sight			13	20		
Sept.	2	To Cash, paid for 4 Packs of Sheep-Skins, with Charges sent him			13	14	15	
	—	To Profit and Loss for my Provision thereon			13		15	
	28	To Cash, for his Bill to *Robert Clark*			13	8		8
				Summa		43	10	8
1717		George Gordon,	Debt.					
Octr.	5	To *Christianus Marbach*, his Accompt current, payable in 2 Month			16	24	8	8

Daniel Stratton, my Accompt of Goods, &c. Credit.

						l.	s.	d.
1717								
Aug.	22	By ditto my Accompt of Sales, for 168 Barrels Herring				149	9	9½
Sept.	18	By ditto my Accompt current, for 40 Barrels Beef sold for ready Money				79	16	
Octr.	8	By Ballance for 280 Yards Plaiden— Value with a part of the Expences			18	7	10	8
				Summa		236	16	5½

Daniel Stratton, my Accompt of Sales, Credit.

						l.	s.	d.
1717				Cr.				
Sept.	10	By ditto my Accompt current,		635	—	149	9	9½

Daniel Stratton, my Accompt current, Cred.

						l.	s.	d.
1717				Cro.				
Sept.	18	By Voyage from *Rochel* to *Amsterdam*, &c. at 57 *d. per* Crown		6	15	1	8	6
	25	By *Herman Van Rymer*, my Accompt current, at 56*d. per* Crown		180	11	42		
		By Broad Cloth in part of a Bill at 57 *d. per* Crown on Sight.		100	3	16		
		By Cash for the rest of the Bill			13	7	13	4
Octr.	8	By Ballance due to me		685	18	162	3	11½
			Summa	971		229	5	9½

Hero Moy, his Accompt of Goods, Credit.

						l.	s.	d.
1717								
Aug.	20	By Cash, sold 8 Packs of Lint at 4 *l. per* Pack, is			13	32		
		By *Peter Chapman*, for 40 Dozen Wooll-Cards			5	32		
			Summa			64		

Hero Moy, his Accompt current, Credit.

						l.	s.	d.
1717								
Sept.	13	By ditto his Accompt of Goods, for the neat Ballance				43	10	8

George Gordon, Credit.

						l.	s.	d.
1717								
Octr.	8	By Ballance in 2 Months			18	24	8	

Cash, Debt.

1717			l.	s.	d.
		Transported from	1425	9	8
Aug.	8	To *John Houston*, for 20 *Carolus* at 23 s. a piece, is	23		
	14	To Mr. *James Truſtwell*	6	6	8
	—	To accepted Aſſignations	28	16	
	15	To *John Blackwood*, my Accompt current	20		
	17	To *Herman Van Rymer*, my Accompt current	40	8	5
	19	To Wagers Accompt	6		
	20	To *Hero Moy*, is Accompt of Goods	32		
Sept.	2	To Profit and Loſs received of *John Blackadder*'s Apprentice-Fee	20		
	5	To *Charles Chareu* our Accompt of Exchange	48	6	8
	13	To *Peter Chapman*	32		
	15	To *James Montgomery*	15		
	18	To Holland	26	8	
	20	To *John Houſton*	3	14	
	25	To *Daniel Stratton*, my Accompt current	7	13	4
	—	To *Benjamin Barclay*, my Accompt with him in Company	25		
Oct.	5	To *Abraham Fairholm*	24		
		Summa	1784	2	9

Profit and Loſs, Debt.

1717					
		Transported from Folio	60	18	
Aug.	24	To Voyage from *Liſbon* in the *Red-Lyon* of *Leith*	74		
Oct.	5	To *Abraham Fairholm*	2	5	
		Transported to	137	3	

1717	Cash, Credit.					
	Transported from				£.	s. d.
Aug. 8	By *Alexander Black*, for 20 *Carolus's* at 22 *s.* 6 *d.* is				1 8	7 7 15 10½
—	By Profit and Loss, lost by the 20 *Carolus's*				6	22 10
13	By Bottomry Accompt, *&c.*				8	10
17	By *Hero Moy* his Accompt of Goods				9	60
19	By Wagers Accompt				12	3 14 8
20	By *Hero Moy*, his Accompt current				9	10
22	By *Thomas Dalziel*				12	20
26	By *Charles Chareu*, our Accompt of Exchange				7	10
30	By *Benjamin Barclay*, my Accompt with him in Company				16	93 6 8
Sept. 2	By *Hero Moy* his Accompt current				15	20
6	By Accompt of outstanding Charges				12	14 15
—	By Claret Wine, for Charges				3	10
7	By Claret Wine				2	5 10
—	By *Hero Moy*, his Accompt of Goods				12	38
—	By *Christianus Marbach*, his Accompt current				16	4 14 8
13	By *Christianus Marbach*, his Accompt current				16	8 8
—	By Wagers Accompt				9	6
28	By *Hero Moy*, his Accompt current				16	10
22	By Voyage from *Amsterdam*, &c.				14	8 8
Oct. 1	By Accompt of outstanding Charges				3	5
5	By Holland				6	40
—	By Lint				6	1 13
7	By general Accompt of Charges of Merchandize				16	2 19
—	By general Accompt of Houshold Expences				16	20
8	By Ballance for Cash in Hand				18	30
						496 5 2½
				Summa		1784 2 9

1717	Profit and Loss, Credit.					
	Transported from				£.	s. d.
Aug. 29	By House in *Castle-hill*				8	100 19
Sept. 2	By *Hero Moy*, his Accompt current				14	200
—	By Mr. *Andrew Cochran*				12	15
—	By Cash				3	50
—	By Mr. *Adam Blackadder*				2	20 1
7	By *Hero Moy*, his Accompt of Goods				15	50
	By *Christianus Marbach*, his Accompt current				12	12
					16	6
				Transported		17 439 14 1

1717		*Charles Chareu*, our Accompt of Exchange in Company	Debt.	*Crowns*		*l.*	*s.*	*d.*
Aug.	26	To Cash paid for a Bill remitted to him (at Sight) 56 *d. per* Crown		400	13	90	6	8
Sept.	22	To Mr. *Robert Blackwood*, at 57 *d. per* Crown		300	15	71	5	
Octr.	8	To Profit and Loss, for my ½ gained on Exchange			17	1	15	5
—		To *Charles Chareu*, his Accompt current for his ½			16	1	15	5
			Summa	700		168	2	6
1717		*House in —— Land*, near the Cannongate-head,	Debt.					
Aug.	26	To Mr. *John Campbel* for the Price				300		
—		To ditto for a Quarters Payment (due at *Martinmass* next) of an Annuity I am burdened with					15	
Octr.	8	To Profit and Loss			17	20		
			Summa			320	15	
1717	8	House in Castle-hill,	Debt.					
Aug.	29	To Profit and Loss, got in Legacy, Value			13	200		
—		To Mr. *Thomas Richman*, for a Legacy due to him			4	30		
			Summa			230		
1717		William Davidson,	Debt.					
Aug.	26	To House in — Land, *&c.* for one Years Rent from *Whitsunday* last, which Rents is payable in ½ Years Payments, the first ½ Year, at *Martinmass* next				20		
1717		Mr. John Campbel,	Debt.					
Octr.	8	To Ballance			18	300	15	
1717		Voyage *from* Amsterdam *in the* Lamb *of* Cockeny,	Debt.					
Sept.	14	To *Herman Van Rymer* Factor at *Amsterdam*, my Accompt currest, for 100 *pd.* Weight Coffee 74 *pd.* Cinnamon, with Charges cost			11	85	16	9
	22	To Cash, paid Freight and other Charges at receiving			13	5		
Octr.	8	To Profit and Loss gained on the Coffee immediately sold off			17	12	3	3
			Summa			103		

1717	*Charles Chareu*, our Account of Exchange ½ in Company	Credit.	*Crow.*		*l.*	*s.*	*d.*
Sept.	5 By Cash received by a Bill on *Andrew Dick* (at 58 *d. per* Crown) - - -		200	1	48	6	8
	10 By Mr. *James Murray*, drawn (at 57½ *d. per* Crown		500	15	119	15	10
		Summa	700		168	2	6

1717	*House in —— Land*, near the Cannongate-head,	Cred.						
Aug.	26 By *William Davidson*, for one Years Rent, from *Whitsunday* last - - - - -			—	20			
Octr.	8 By Ballance - - - - -			18	300	15		
		Summa			320	15		

1717	House in Castle-hill,	Credit.						
Octr.	8 By Ballance - - - - - -			18	230			

1717	William Davidson,	Credit.						
Octr.	8 By Ballance at *Martinmas* next - - -			18	20			

1717	Mr. John Campbel,	Credit.						
Aug.	26 By House in — Land, *&c.* payable in one Year -			—	300			
	— By ditto for ¼ Years Annuity, due at *Martinmas* next					15		
		Summa			300	15		

1717	Voyage *from* Amsterdam *in the* Lamb *of* Torkeny,	Credit.						
Sept.	22 By Cinnamon, received 74 *pd.* Weight Value - -			16	43			
	— By Mr. *Adam Blackadder* for 100 *pd.* Weight Coffee immediately sold and delivered, at 12 *s. per* Pound, is			15	60			
		Summa			103			

1717		Ship the Dragon of Queensferry,	Debt.		l.	s.	d.
Aug.	29	To *Thomas Dalziel* for my $\frac{1}{7}$ bought of him		7	100		
Octr.	8	To Profit and Loss		17	10		
			Summa		110		
1717		Mr. James Murray,	Debt				
Aug.	29	To Ship, *The Dragon of Queensferry* for my $\frac{1}{3}$ of her Freight to *Stockholm*, payable at *Martinmass* next		—	10		
Sept.	10	To *Charles Charreu*, our Accompt of Exchange, payable in one Month		14	119	15	10
			Summa		129	15	10
1717		*Benjamin Barclay*, my Accompt with him in Company, each $\frac{1}{2}$	Debt.				
Aug.	30	To Cash, stocked in with him for my $\frac{1}{2}$		13	20		
Sept.	18	To *Alexander Black* for a Bill I have accepted		6	10		
Octr.	8	To Profit and Loss gained by this Partnership		17	10		
			Summa		40		
1717		Mr. Robert Blackwood,	Debt.				
Aug.	30	To *John Blackwood*, my Accompt current, payable in one Month		11	33	10	
Octr.	8	To Ballance, payable 22d Instant		18	71	5	
			Summa		104	15	
1717		Mr. Adam Blackadder,	Debt.				
Sept.	2	To Profit and Loss, owing of his Son's Apprentice-Fee payable in one Year		13	50		
	22	To Voyage from *Amsterdam*, &c. payable in 6 Months		14	60		
			Summa		110		
1717		*Monsieur* St. *Bonnet*, Stocking-Maker,	Debt.				
Octr.	8	To Ballance, payable 7th *January* next		18	50		
1717		Voyage from Rochel to Amsterdam,	Debt.				
Sept.	18	To *Daniel Stratton* my Accompt of Wooll, 4 Packs		11	55	9	6½
	—	To ditto my Accompt current, for Charge and Provision		12	1	8	6
			Summa		56	18	½

Ship the Dragon of Queensferry, Credit.

				l.	s.	d.
1717 *Aug.*	29	By Mr. *James Murray* for ⅓ of her Freight to *Stockholm*	—	10		
Octr.	8	By Ballance (the Ship is now at *Stockholm*)	18	100		
		Summa		110		

Mr. James Murray, Credit.

1717 *Octr.*	8	By Ballance	18	129	15	10

Benjamin Bartlay, &c. Credit.

1717 *Sept.*	28	By Cash, } received in full of my Concern in Partnership	13	25		
		By Iron, } with him	6	15		
		Summa		40		

Mr. Robert Blackwood, Credit.

1717 *Sept.*	15	By Mr. *David Johnston*, for an Assignation	3	33	10	
	22	By *Charles Chareu*, our Accompt of Exchange, for his Bill, payable at single Usance	14	71	5	
		Summa		104	15	

Mr. Adam Blackadder, Credit.

1717 *Octr.*	8	By Ballance	18	110		

Monsieur **St. Bonnet, Stocking-Maker,** Credit.

1717 *Sept.*	7	By *Christianus Marbach*, his Accompt current, payable in 4 Months	16	50		

Voyage from Rochel to Amsterdam, Credit.

1717 *Octr.*	8	By Ballance, for 4 Packs of Wooll shipped for *Amsterdam*, about which there is yet no Advice	18	56	18	½

1717		*Christianus Marbach* at *Rotterdam*, his Accompt current	Debt.		*l.*	*s.*	*d.*
Sept	7	To Mr. St. *Bonnet*, for 200 pair coarse Stockings	–	15	50		
		To Cash paid in part of 700 Yards coarse Linnen	–	13	7	10	
		To *Thomas Dalziel*, for the rest of the Linnen	–	7	10		
		To Cash paid of Charges	– – –	13		18	
		To Profit and Loss for my Provision	– –	13	6		
	13	To Cash paid of Freight, and other Charges at shipping his Goods	– – –	13	6		
			Summa		80	8	

1717		Lint,	Debt.	*Stone*			
Octr.	5	To *Christianus Marbach*, his Accompt current, sent me 4 Pack weighting	– –	72		36	
		To Cash paid at receipt of them	– –	13		2	19
			Summa	72		38	19

1717		General Accompt of Charges of Merchandize,	Debt.				
Octr.	7	To Cash paid out since 1st *May*, as *per* Book of Charges of Merchandize	– – –	13	20		

1717		General Accompt of Houshold Expences,	Debt.				
Octr.	7	To Cash, paid out since 1st of *May*, as *per* Book of Household Expences	– – –	13	30		
		To Accompt for Houshold Expences outstanding			15		
			Summa		45		

1717		Accompt for Houshold Expences outstanding,	Debt.				
Octr.	8	To Ballance (as *per* Book of Houshold Expences)	–	18	15		

1717		*Charles Chareu* at *Bourdeaux*, his Accompt current,	Debt.				
Octr.	8	To Ballance, for his ½ Gain on the Exchange in my Hands		18	1	15	5

1717		Cinnamon,	Debt.	*pd. wght.*			
Sept.	12	To Voyage from *Amsterdam*, &c.	– – –	74	14	43	

1717		*Christianus Marbach* at *Rotterdam*, his Accompt current,	Cred.	*l.*		*s.*	*d.*
Octr.	5	By Holland sent me		6	20		
		By Lint sent me		14	36		
		By *George Gordon* for a Bill on him		12	24	8	
			Summa		80	8	

1717		Lint,	Cred.	*Stone*			
Octr.	8	By Ballance		72	18	38	19

1717		General Accompt of Charges of Merchandize,	Cred.				
Octr.	8	By Profit and Loss			17	20	

1717		General Accompt of Houshold Expences,	Cred.				
Octr.	8	By Profit and Loss			17	45	

1717		Accompt for Houshold Expences outstanding,	Cred.				
Octr.	7	By general Accompt of Houshold Expences, as *per* Book of Houshold Expences				15	

1717		*Charles Chareu* at *Bourdeaux*, his Accompt current	Cred.				
Octr.	8	By ditto our Accompt of Exchange in Company			14	1	15 5

1717		Cinnamon,	Cred.	*pd.wght.*			
Octr.	8	By Ballance, remains on Hand		74	18	43	

Profit and Loss, Debt.

				l.	s.	d.
1717 Octr. 8	Transported from *Folio*	:	:	13 137	3	
	To Tobacco	:	:	2 34	3	10
	To general Accompt of Charges of Merchandize	:		17 20		
	To general Accompt of Houshold Expences	:		17 45		
	To Stock for the neat Gain, since last ballancing	:		1 675		3½
			Summa	911	7	1½

				l.	*s.*	*d.*
1717	Profit and Loss,	Credit.				
	Transported from		13	439	14	1
Octr.	8 By Claret Wine		2	81	10	
	By Raisins		2	12	8	9
	By broad Cloth		3	29	6	4
	By *French* Paper		4	19	4	6
	By Iron		6	18	15	
	By Holland		6	5	17	
	By Voyage to *Bourdeaux* in the *Succes* of *Burntisland*		7	3	18	8
	By Figs		7	14	2	
	By Wagers Accompt		9	1		
	By Insurance Accompt		10	67		
	By *John Blackwood*, my Accompt of Brandy		10	124	9	
	By *Herman Van Rymer* at *Amsterdam*, my Accompt of Sheep Skins		11	11	3	4
	By *Daniel Stratton* at *Rochel*, my Accompt of Goods		12	28	19	9½
	By *Charles Chareu*, our Accompt of Exchange		14	1	15	5
	By the House in——Land, near the *Canongate* Head		14	20		
	By Voyage from *Amsterdam*, in the *Lamb* of *Cockeny*		14	12	3	3
	By Ship the *Dragon* of *Queensferry*		15	10		
	By *Benjamin Barclay*, my Accompt with him in Company		15	10		
		Summa		911	7	1½

				l.	*s.*	*d.*
1717		Balance, Debt.				
Octr.	8	To Claret Wine, for 7 Hhds. ditto on Hand Value	2	45	16	8
		To Tobacco for 12 Hhds. worth	2	150	10	2
		To Raisins for 10 Barrels, worth	2	15	11	1
		To Mr. *William Wallace* of Principal, due at *Martinmas* next, *per* Bond	2	53	15	
		To broad Cloth, for 5 Pieces, containing in all 107 Yards, worth	3	82	3	4
		To Mr. *Andrew Hunter*, Principal and Interest, due at *Martimas* next *per* Bond	3	102	11	5
		To Mr. *Andrew Cochran*	3	87	10	
		To Moveables and Houshold Furniture	3	200		
		To Mr. *David Johnston*	4	14	4	
		To *French* Paper, for 14 Bales, valued		54	10	6
		To *John Paton* due in 6 Months	4	63	14	
		To *Daniel Trader*, due upon Demand	5	23		
		To accepted Assignations due by *Jeremy Thomson* in 4 Months	5	90		
		To Iron, 350 Stone, worth	6	53	15	
		To Holland, for 200 Yards	6	46	10	4
		To Musline for 400 Yards	6	100		
		To Linnen for 750 Yards	6	50		
		To Delivery Accompt of buying, for 100 Bolls Wheat, to be delivered me by *Thomas Dalziel* the first of *November* next	8	150		
		To Bottomry-Accompt, on the *Faulcon* of *Aberdeen*	9	80		
		To Wagers-Accompt, for the Wager against *Thomas Arrowsmith*, undecided	9	10		
		To *Daniel Stratton*, my Accompt current, 685 *Crowns*	12	162	3	11⅓
		To *Daniel Stratton*, my Accompt Goods, for 280 Yards Plaiden, valued	12	7	10	8
		To *George Gordon*, payable in 2 Months	12	24	8	
		To House in——Land near the *Canongate* Head	14	300	15	
		To House in *Castlehill*	14	230		
		To *William Davidson*, payable at *Martimas* next	14	20		
		To Ship, the *Dragon* of *Queensferry*	15	100		
		To Mr. *James Murray*	15	129	15	10
		To Mr. *Adam Blackadder*, for 110 *l.* whereof 60 *l.* payable 22d *March* next, and the remaining 50 *l.* the 2d *September* thereafter	15	110		
		To Voyage from *Rochel* to *Amsterdam*, for 4 Packs Wool, shipped for *Amsterdam*, about which there is no Advice	15	56	18	⅓
		To Lint, for 32 Stone	16	38	19	
		To Cinnamon, for 74 Pound Weight	16	43		
		To Cash in Hand	13	496	5	2½
		Summa of my present gross Estate		3193	7	2½

Balance, Credit.

			l.	s.	d.
1717 Octr. 8	By Mr. *Thomas Richman*, due at *Martinmass* next :	4	45		
	By Mr. *Andrew Coupar*, due at *Martinmass* next :	4	10		
	By *Alexander Black* : : :	6	22	7	4
	By *Thomas Dalziel* : : :	7	250		
	By *Herman Van Rymer* at *Amsterdam*, my Accompt current, for 522 2/11 *Guilders* : :	11	44	5	2
	By Mr. *John Campbell* : :	14	300	15	
	By Mr. *Robert Blackwood*, payable 22d Instant :	15	71	5	
	By Monsieur St. *Bonnet* Stocking-maker, payable 7th *January* next : :	15	50		
	By Accompt of Houshold Expences outstanding, (as *per* Book of Houshold Expences) :	16	15		
	By *Charles Chareu* at *Bourdeaux*, his Accompt current, for his ½ Gain on the Exchange in my Hands :		1	15	5
	Total of my present Debts		810	07	11
	By Stock for my present free Estate :	1	2382	19	3½
	Summa		3193	7	2½

INDEX
OF THE
LEGER, No. I.

A.

ACCEPTED Assignations 5

B.

BRANDY - 5
Alexander Black - 6
Bottomry-Accompt - - 9
John Blackwood Factor in *London*, my Accompt of Brandy - 10
Ditto *Blackwood* my Accompt current 11
Benjamin Barclay my Accompt with him in Company - 15
Mr. *Robert Blackwood* - 15
Mr. *Adam Blackadder* - 15
Balance - - 18

C.

CASH - 2, 13
Broad Cloth - 3
Mr. *Andrew Cochran* - 3
Accompt of outstanding Charges 3
Mr. *Andrew Coupar* - 4
Peter Chapman - 5
Cinnamon - - 16
Charles Chareu our Accompt of Exchange - 14
Mr. *John Campbel* - 14
General Accompt of Charges of Merchandize - - 16
Charles Chareu at *Bourdeaux*, his Accompt current - 16

D.

THomas *Dalziel* - 7
Delivery-Accompt of buying 8
Delivery-Accompt of Sales - 8
William Davidson - 14

E.

GENERAL Accompt of Houshold Expence - 16
Accompt of Houshold Expence outstanding - 16

F.

ABraham *Fairholm* - 7
Figs - - 7

G.

GEorge *Gordon* - 12

H.

MR. *Andrew Hunter* - 3
John Houston - 5
Holland - - 6
Accompt of Herrings - 7
Hazard Accompt - 10

House in—Land near the Cowngate Head - - 14
House in *Castle-hill* - 14

L.

MR. *David Johnsten* - 3
Iron - - 6
Insurance Accompt - 10

L.

LINNEN - 7
Lint - - 14

M.

MOVABLES and Houshold Furniture - 3
Musline - - 6
James Montgomery - 6
Cornelius Mandoli Factor at *Lisbon*, my Accompt current - 10
Hero Moy his Accompt of Goods 12
Ditto *Moy* his Accompt current 18
Mr. *James Murray* - 15
Christianus Marbach at *Rotterdam*, his Accompt current 16

P.

FRench Paper - 4
John Paton - 4
Profit and Loss - 8, 13, 17

R.

RAISINS - - 2
Mr. *Thomas Richman* - 4

S.

STOCK - 1
Mr. *William Smith* - 4
Salmond - - 6
Sheep Skins - 10
Daniel Stratton at *Rochel* my Accompt of Wooll - 11
Ditto *Stratton* my Accompt of Goods - 12
Ditto *Stratton* my Accompt of Sales 13
Ditto *Stratton* my Accompt current 12
Ship the *Dragon* of *Queensferry* - 15
Monsieur St. *Bonnet* - 15

T.

TOBACCO - 2
Mr. *James Traistwell* - 4
Daniel Trader - 5

W.

CLARET Wine - 2
Mr. *William Wallace* - 2
Wagers Accompt - 9
Wooll - - 9

V.

VOYAGE to *Bourdeaux*, in the *Succes* of *Burntisland* - 7
Voyage to *Rochel* in the *Swan* of *Kirkaldy* - 8
Voyage to *London*, in the *Hind* of *Kinghorn* - 9
Voyage to *Amsterdam*, in the *Wild-Cat* of *Dysert* - 10
Voyage from *Lisbon*, in the *Red Lyon* of *Leith* - 10
Voyage from *Bourdeaux*, in the *Succes* of *Burntisland* - 10
Herman Van Rymer at *Amsterdam*, my Accompt current - 11
Ditto *Van Rymer*, my Accompt of Sheep Skins - 11
Voyage from *Amsterdam*, in the *Lamb* of *Cockeny* - 14
Voyage from *Rochel* to *Amsterdam* 15

Follows the WASTE-BOOK, N°. II. *wherein I have ſubjoined the* JOURNAL (i. e. *the* Debtors and Creditors) *after every Tranſaction: And, in a* Parentheſis, *after the Name of the* Debtor *and* Creditor Accompt, *I have ſet the Number of the* LEGER Folio, *where the* Accompt *ſtands.*

Waste-Book, N°. II.

(With the JOURNAL subjoined.)

EDINBURGH, *October* 10th, 1717.

INVENTARY *of the Eſtate and Debts belonging to me*, A. M. *Merchant in* Edinburgh, *taken from the Balance of the former* WASTE-BOOK, N°. I. *Viz.*

	l.	s.	d.
I HAVE in *Caſh* (1) lying by me, the Sum of : :	496	5	2
There remain in my Ware-Houſes theſe Goods, viz.			
Of *Claret Wine* (2) 7 Hhds. Value : :	45	16	8
Of *Tobacco* (2) 13 Hhds. Value : : :	150	10	2
Of *Raiſins* (2) 10 Barrels : : :	15	11	1
Of *Broad Cloth* (2) 5 Pieces, in all 107 Yards, worth :	82	3	4
Of *French Paper* (2) 14 Bales : : :	54	10	6
Of *Iron* (2) 350 Stone : : :	53	15	0
Of *Holland* 200 Yards } (2) : :	46	10	4
Of *Muſline* 400 Yards } (2) : :	100		
Of *Linnen* 750 Yards } : :	50		
Of *Cinnamon* (3) 74 Pound Weight : :	43		
I have in the Hands of *Daniel Stratton* at *Rochel* 280 Yards *Plaiden*, (3) valued at : : :	7	16	8
Of *Lint* (3) 72 Stone : : : :	38	19	0
I have a *Houſe in* ——*Land near the Canongate-head* (3) valued at :	300	15	0
I have a *Houſe in the Caſtle-hill* (3) valued at : :	230		
I have ½ Parts of the *Ship the Dragon of Queensferry* (3) now upon a *Swediſh* Voyage : : : :	100		

I have

	l.	s.	d.
I have aboard the *Lamb* of *Cockeny*, in her *Voyage from* Rochel to Amsterdam (3) 4 Packs of Wooll, Value :	56	18	4
There is owing me on *Bottomry* of the *Falcon* of *Aberdeen*, at her safe Arrival from *Genoa* (4) Principal and Interest :	80		
I have consigned in a *Wager* (4) against *Thomas Arrowsmith* :	10		
I have 100 Bolls Wheat, to be received from *Thomas Dalziel* 1st of *November* next, upon *Delivery-Accompt* (4) by Contract :	150		
My *Moveables and Houshold Furniture* is valued at (4) :	200		
The following Persons are in Debt to me for the Balance of their Accompts,			
Mr. *William Wallace* (4) payable at *Martinmass* next :	53	15	
Mr. *Andrew Hunter* (4) payable at *Martinmass* next, by his Bond	102	11	5
Mr. *Andrew Cochran* (5) : : :	87	10	
Mr. *David Johnston* (5) : :	14	4	
John Paton (4) due in 6 Months : :	63	14	
William Davidson, at *Martimass* next (5) : :	20		
Daniel Trader (5) due on Demand : :	23		
Jeremy Thomson, by an *accepted Assignation* (5)	90		
James Murray (5) : : :	129	15	10
Mr. *Adam Blackadder* (6) : :	110		
George Gordon, (6) due in 2 Months : :	24	8	
Daniel Stratton at *Rochel*, for my Accompt current, (6) 685 *Crowns*, which according to the Balance of *English* Money, not the true Exchange, is : :	162	3	11⅓
For all these Articles Stock *is* Creditor (1) *and the several Subjects* Debtors.			
I am due to the following Persons for the Balance of their Accompts, viz.			
To Mr. *Thomas Richman* (6) at *Martinmass* next	45		
To *Alexander Black* (6) : : :	022	7	4
To *Thomas Dalziel* (4) whereof 150 *l.* is for Goods to be delivered 1st *November* : :	250		
To Mr. *Robert Blackwood*, (7) payable 22d instant :	71	5	
To *Monsieur St. Bonnet*, (7) payable 7th *January* next	50		
To *Charles Chareu* at *Bourdeaux*, for his Accompt current, (7) the Gain owing upon a former Accompt of Exchange betwixt us	1	15	5
To *Herman Van Rymer* at *Amsterdam*, for my Accompt current (7) 521 11/11 *Guilders*, which according to the Balance of the *English* Money, is :	44	5	8
To Mr. *Andrew Coupar*, (7) due at *Martinmass* next :	10		
To Mr. *John Campbel* (7) : : : :	300	15	
To several Persons *for Houshold Expences outstanding*, (7) as *per* Book of Houshold Expences : : :	15		
For all these Articles Stock *is* Debtor (1) : : :			

Follows

JOURNAL-BOOKS.

Follows the daily Tranſactions of my Trade.

	l.	s.	d.
Edinburgh, 10th, October, 1717.			
Sold for ready Money 7 Hhds *Claret Wine*, at 10 *l. per* Hhd.	70		
Alſo for ready Money 10 Barrels of *Raiſins*, at 1 *l.* 18 *s. per* Barrel	19		
Alſo for ready Money 350 Stone *Iron*, for : :	60	10	
Creditors Wine (2) 70 *l.* Raiſins (2) 19 *l.* Iron (2) 60 *l.* 10 *s.*			
Debtor, Caſh (1) for all			
Ditto 12th,			
Received Advice from *Herman Van Rymer* at *Amſterdam*, That he has received from aboard the *Lamb* of *Cockeny*, my 4 Packs of Wooll ſhipt at *Rochel*, and that he has ſold the ſame for ready Money, the neat Proceed of which amounts to 800 *Guilders*, which at preſent Rate of Exchange 1 *s.* 9 *d. per Guilder*, is : :	70		
Debtor, *Van Rymer*, my Accompt current (7) 70 *l.* Creditor, Voyage from Rochel (3) 70 *l.*			
Received Payment of the following Debts in *Caſh*, viz.			
From Mr. *James Murray* : : : :	129	15	10
From *Daniel Trader* : : : :	23		
From Mr. *David Johnſton* : : :	14	4	
Debtor Caſh (1) for the whole; Creditors, *James Murray* (5) *Daniel Trader* (5) *David Johnſton* (5)			
Ditto 16th,			
Remitted to *Charles Chareu* of *Bourdeaux* 200 *Crowns*, at 57 *d. per Crown*, is 47 *l.* 10 *s.* in my own Bills on *Daniel Stratton* my Factor at *Rochel*, payable at ſingle Uſance. : : :	47	10	
N. B. 1 *l.* 15 *s.* 5 *d.* or $7\frac{1}{17}$ *Crowns*, is for Payment of what I owed him for the Gain of Exchange in my Hands, the remaining Part, *viz.* 45 *l.* 14 *s.* 7 *d.* equal to $192\frac{1}{17}$ *Crowns*, is for our Accompt of Exchange continued			
	l.	*s.*	*d.*
Debtors, *Charles Chareu*, his Accompt current (7) for	1	15	5.
Ditto, our Accompt of Exchange (8) for	45	14	7
Creditor, *Daniel Stratton*, my Accompt current (6) for all.			
I have entred into an equal Partnerſhip with Mr. *Andrew Cochran* for an Inland-Trade to be under his Direction and Management; in purſuance whereof, I allow him 40 *l.* of the Money he owes me, as my ½ to be laid out for ſuch Goods and Commodities as he thinks beſt.	40		
Debtor, *Andrew Cochran*, my Accompt with him in Company (8)			
Creditor, *Ditto Cochran*, (his proper Accompt) (5)			
Received Advice from *Daniel Stratton* Factor at *Rochel*, that he hath ſold my 280 Yards Plaiden in his Hands for ready Money, the neat Proceeds amounting to 50 *Crowns*, which at 57 *d.* is 11 *l.* 17 *s.*			

17 *s.* 6 *d.* and for payment thereof, and of what more he owed, he has remitted me 535 *Crowns* at 57 *d.* amounting to 127 *l.* 1 *s.* 3 *d.*

In the Bills of *Pierre Fontaine* on Mr. *Thomas Richman*, at 24 Days Sight, this Day accepted.

	l.	*s.*	*d.*	*l.*	*s.*	*d.*
				127	1	3

Creditors, *Daniel Stratton*, my Accompt of Goods (3) 11 17 6
——— my Accompt current (6) 115 03 9
Debtor, *Ditto Richman* (6) for all.

Ditto 18th,

I have paid the several Persons to whom I owed for Houshold Expences outstanding; 15

Debtor, Accompt for Houshold Expences outstanding (7)
Creditor, Cash (1)

Drawn upon *Herman Van Rymer* for my Accompt 277 *Guilders* (for Payment of 277$\frac{1}{11}$ *Guilders*) at 1 *s.* 10 *d.* per *Guilder*, is 25 *l.* 7 *s.* 10 *d.* payable to *Alexander Drummond*, or Order, at 10 Days Sight, which he has paid me in Cash

				25	7	10

Debtor Cash (1) Creditor, *Van Rymer*, my Accompt current (7)

Ditto 19th,

This Day received from aboard the *Leopard* of *Aberdeen*, the following Goods consigned to me by *Hero Moy* of *Amsterdam*, to sell for his Accompt; whereupon I have paid the Charges following

Of Mace 10 Barrels
Of Cloves 8 Barrels } I have paid out of Charges

				2	6	

Debtor *Hero Moy*, his Accompt of Spiceries (8) Creditor, Cash (1)

Ditto 21st,

Thomas Dalziel has this Day delivered me 80 Bolls of Wheat, which I accept in Implement of our Bargain for 100 Bolls: The 80 Bolls at the Price formerly charged, *viz.* 1 *l.* 10 *s.* amounts to 120 *l.* but for ready Money he accepts of 118 *l.* paid

				118		

Debtors, Wheat (6) 118 *l.*
Thomas Dalziel (6) 32, *viz.* 30 *l.* for the 20 Bolls, and 2 *l.* rebated } Creditors, Delivery Accompt of buying (4) 150 *l.*
Thomas Dalziel 118 *l.* To Cash (1) 118 *l.*

Ditto

Daniel Trader, and I have agreed to Trade in Company, he $\frac{2}{3}$ and I $\frac{1}{3}$ to be under my Direction and Management, being allowed 3 *per Cent.* of Provision, and for his Share has delivered to me 8 Pieces of Broad-Cloth 22 Yards each, worth 165 *l.* 12 *s.* And for my $\frac{1}{3}$ I join 5 Piece which I have had for some Time on Hand, containing 107 Yards worth 82 *l.* 3 *s.* 4 *d.* and have bought 9 Pieces more, containing in all 190 Yards, for which I have paid in Cash 129 *l.* 8 *d.* total Stock is

				316	16	

Debtor

Debtor, Broad-Cloth in Company (9) Creditors, *Daniel Tarder* his Accompt in Company (8) for 105 *l.* 12 *s.* Broad-Cloth (2) 82 *l.* 3 *s.* 4 *d.* Cash (1) 129 *l.* 8 *d.* | *l.* | *s.* | *d.*

Ditto 22d.

Sold for the Accompt of *Hero Moy* of *Amsterdam*, 6 Barrels of *Mace* at 4 *l. per* Barrel, for ready Money : : : 24

Also to Mr. *David Johnston* 4 Barrels of *Cloves* at 4 *l.* 10 *s.* is 18 *l.* payable in 3 Months. : : : : 18

Debtors Cash (1) 24 *l.* } Creditor, *Hero Moy*, his Accompt of
David Johnston (5) 18 *l.* } Spiceries (8)

Mr. *David Johnston*, *Alexander Black*, and I, have agreed to Trade in Company, each ⅓, and they have given me the chief Management, no Purchase to be made by me without their Advice and Consent.

In pursuance of this Contract, I have received from *David Johnston* 6 Hhds. Claret Wine, valued at 54 *l.* and in *Cash* 6 *l.* Total 60 *l.* 60

From *Ditto Black* in *Cash* 37 *l.* 12 *s.* 8 *d.* and I being in his Debt 22 *l.* 7 *s.* 4 *d.* I'm to lay out that for him, Total 60 *l.* : 60

For my Share I am to lay out immediately 60 *l.* : 60

Debtors, *Goods in Company with Mr.* David Johnston *&c.* (9) for 6 Hhds Wine 54 *l.* Cash (1) (received from the Partners) 43 *l.* 12 *s.* 8 *d.*

Alexander Black (his proper Accompt) (6) for what I lay out for him, 22 *l.* 7 *s.* 4 *d.*

Creditors, *David Johnston, his Accompt in Company* ⅓ (9) for 60 *l.*
Alexander Black, his Accompt in Company ⅓ (9) 60 *l.*

Ditto 23d,

Sold for the Accompt in Company, betwixt *Daniel Trader* and me, 10 Pieces of Broad-Cloth for ready Money, amounting in all to : : : : : 160

Debtor, Cash (1) Creditor, Broad-Cloth in Company (9)

Bought for the Accompt in Company, betwixt Mr. *David Johnston*, &c. 20 Packs of Sheep-Skins, which with the Expences paid all in ready Money, amounts to 126 *l.* : : : 126

Note, This Purchase exhausts what Money I received from the Partners, and was bound to lay out.

Debtor Goods in ditto Company (9) Creditor, Cash (1)

Ditto 26th,

I have sold for the Accompt in Company, betwixt Mr. *David Johnston*, &c. and me 4 Hhds. *Claret Wine*, at 12 *l. per* Hhd. is 48 *l.* to *James Murray* payable in 6 Months : : 48

Debtor, *James Murray* (5) Creditor, Goods in ditto Company (9)

	l.	s.	d.
Sold for the Accompt in Company betwixt *Daniel Trader* and me to Mr. *Robert Blackwood*, 12 Pieces Broad-Cloth, amounting to 190 *l.* whereof paid 118 *l.* 15 *s.* and 71 *l.* 5 *s.* I ow'd him, and hold good for ready Money to my Partner : : :	190		
Debtors, Mr. *Robert Blackwood* (7) 71 *l.* 5 *s.* Cash (1) 118 15 } Creditor, Broad-Cloth in ditto Company (9)			

Ditto 27th,

All the Broad-Cloath in Company betwixt *Daniel Trader* and me, being disposed of, I charge the Accompt for 1 *l.* 10 *s.* of small Charges paid out by me, and 8 *l.* 16 *s.* for my Provision, in all :	10	6	
Debtor, Broad-Cloth in Company (9) Creditors, Cash (1) 1 *l.* 10 *s.* and Profit and Loss (10) 8 *l.* 16 *s.*			
There is gained on the Accompt 22 *l.* 18 *s.* for which the Accompt is Debtor to my Partners Accompt in Company (8) for $\frac{1}{3}$ being 7 *l.* 12 *s.* 8 *d.* and to Profit, &c. for my $\frac{2}{3}$ being 15 *l.* 5 *s.* 4 *d.*	22	18	
I have given to ditto *Trader* as his $\frac{1}{3}$ of the neat Product of the Cloth, in ready Money : : : :	113	4	8
Debtor, *Trader*'s Accompt in Company (8) Creditor, Cash (1)			

Ditto 28th,

The *Faulcon* of *Aberdeen* being arrived from *Genoa*, I have received from *Laurence Lovemoney*, Payment of Principal and Interest thus, *viz.*

	l.	s.	d.
In Cash : : :	56	00	00
A Bill upon *Hero Moy* of *Amsterdam*, for 170 $\frac{10}{11}$ *Guilders* at 22 *d.* which I sent indorsed to himself for his *Accompt* : : : :	24		
	80		
Debtors, Cash (1) 56 *l.* *Hero Moy*'s Accompt current (10) 24 *l.* } Creditor, Bottomry Accompt (4)	80		

The Wager against *Thomas Arrowsmith*, is determined against me, the *Crocodile* of *Leith* being arrived from *Virginia* : : 10

Debtor, Profit, &c. (1) Creditor, Wager-Accompt (4)

Ditto 30th,

Bought for the Accompt in Company betwixt *Daniel Trader* $\frac{1}{3}$ and my self $\frac{2}{3}$ 400 Yards fine Linnen, at 3 *s. per* Yard, is 60 *l.* and have paid the same in ready Money : : : : 60

Debtors, Linnen in Company (10) 60 *l.* *Daniel Trader* proper Accompt (5) 20 *l.* } Creditors, Cash (1) 60 *l.* *Daniel Trader*, Accompt in Company (8) 20 *l.*

Sold

	l.	s.	d.
Sold for ready Money the following Goods, *viz.*			
Cinnamon, 74 *pd.* Weight, for : 30 *l.*			
Lint 72 Stone, for : : 36 *l.*			
	66		
Debtors, Cash (1) Creditors, Cinnamon (3) 30 *l.* Lint (3) 36 *l.*	66		

November 2d,

Sold for the Accompt in Company betwixt Mr. *David Johnston*, &c. 10 Packs of Sheep Skins, at 4 *l. per* Pack, for ready Money. : : : 40

Debtor Cash (1), Creditor Goods in Company (9)

Bought for Accompt of the said Company, 20 Pack of Wooll, at 6 *l. per* Pack, is 120 *l.* from Mr. *William Wallace*, whereof paid in Cash of the Company's 40 *l.* the Remainder payable in 1 Month 120

Debt. Goods in Company (9) 120 *l.* Cred. { Cash (1) 40 *l.* / Ditto *Wallace* (4) 80 *l.*

D. J.'s proper Accompt (5) for his $\frac{1}{3}$ 60 *l.* to his Accompt in Comp. (9)

A. Black's proper Accompt (6) his $\frac{1}{3}$ 60 *l.* to his Accompt in Comp. (9)

Also because 40 *l.* of their Cash is out of my Hands, I make their Accompt in Company, Debtors to their proper Accompt for their Shares, which is 13 *l.* 6 *s.* 8 *d.*

Ditto 4th,

Remitted to me by *Charles Chareu* for our Accompt of Exchange, 150 *Crowns*, at 56$\frac{1}{2}$ *d. per Crown*, is 35 *l.* 6 *s.* 3 *d.* in the Bills of *Alexander L'Blanc* upon *David Lisset*, payable at 10 Days Sight, this Day presented and accepted : : 35 6 3

Debtor, accepted Bills payable to me (10). Creditor, *Charles Chareu* our Accompt of Exchange (8).

Mr. *Andrew Cochran* has drawn upon me for 60 *l.* the total Value of certain Goods bought by him for our Accompt in Company, the Bill I have paid presently : : 60

Debtors, Ditto *Cochran* my Accompt with him, &c. (8) for my $\frac{1}{2}$ 30 *l.* / his proper Accompt (5) paid for him 30 *l.* } Creditor, Cash (1).

Ditto 5th,

Sold for the Accompt in Company betwixt *Daniel Trader* and me, 100 Yards fine Linnen, at 4 *s. per* Yard, is 20 *l.* for which I have received a Bill upon ditto *Trader*, payable on Demand : 20

Debtor, ditto *Trader* his proper Accompt (5) 20 *l.* Creditor, Linen in Company (10). The $\frac{1}{2}$ of this being his own, I make his Accompt in Company (8) Debtor to his proper Accompt for 6 *l.* 6 *s.* 8 *d.* which discharges us both.

	l.	s.	d.
I have bought for the Accompt of the said Company 200 Yards more of Linnen, at 3 *s.* 6 *d. per* Yard, is 35 *l.* from Mr. *Andrew Hunter*, payable in 20 Days,	35		

Debtor, Linnen in Company (10) 35 *l.* Creditor, ditto *Hunter* (4), also *Trader's* proper Accompt (5) for his $\frac{1}{3}$, 11 *l.* 13 *s.* 4 *d.* is Debtor to his Accompt in Company (8).

Ditto 8th,

Shipped aboard the *Speedwell* of *Leith* for *Amsterdam*, consigned to *Hero Moy*, for the Accompt in Company betwixt Mr. *David Johnston*, *&c.* 20 Packs of Wooll, and have paid Charges and Insurance thereupon, *viz.*					
		l.	s.		
The 20 Packs worth		120			
The Charges paid		2	14		
Insurance paid to *John Thomson*, at 10 *per Cent.*	12				
Freight owing to Mr. *John Campbel*	8				
	142	14		142	14

Debtor, Voyage in ditto Company (11) for all. Creditors, Goods in Company (9) for 120 *l.* Cash (1) 14 *l.* 14 *s.* Mr. *John Campbel* (7) 8 *l.*

Again for the Particulars, I make their proper Accompts Debtors to their Accompts in Company, for their $\frac{1}{5}$ of the Charges, Insurance and Freight, *viz.* 22 *l.* 14 *s.* the $\frac{1}{3}$ whereof is 7 *l.* 11 *s.* 4 *d.*

Sold for the Accompt in Company betwixt Mr. *David Johnston*, *&c.* 20 Packs of Sheep Skins at 4 *l.* 5 *s.* per Pack, amounts in all to 85 *l.* for ready Money : 85

Debtor, Cash (1). Creditor, Goods in ditto Company (9).

Ditto 11th,

Given to Mr. *David Johnston* and *Alexander Black*, for their Accompts in Company, each $\frac{1}{3}$ of 20 Pack of Sheep Skins sold by me for ready Money, their $\frac{2}{3}$ amounting to	56	13	4

Debtors, Mr. *David Johnston* his Accompt in Company (9) 28 *l.* 6 *s.* 8 *d.* *Alex. Black* his Accompt in Company (9) 28 *l.* 6 *s.* 8 *d.* } Creditor, Cash (1).

Sold more for the Accompt in Company with Mr. *David Johnston*, &c. 2 Hhds. Wine for 27 *l.* to Mr. *James Murray*, payable 26th *April* next : 27

Debtor, Mr. *James Murray* (5). Creditor, Goods in Company (9).

Remitted

	l.	s.	d.
Ditto 12th,			
Remitted to *Charles Chareu*, for our Accompt of Exchange in Company, in the Bills of *Anthony Graham*, on Mr. *James Lafreeze* 200 *Crowns*, at 56 *d. per Crown*, is 46 *l.* 13 *s.* 4 *d.* presently paid	46	13	4
Debtor, *Charles Chareu* our Accompt of Exchange (8). Creditor, Cash (1).			
Ditto 15th,			
Sold for the Accompt in Company betwixt *Daniel Trader* and me, 300 Yards of Linnen, at 3 *s.* 10 *d. per* Yard, is 57 *l.* 10 *s.* to Mr. *William Walace*, payable on Demand	57	10	
Debtor, Mr. *William Wallace* (4). Creditor, Linnen in Company (10).			
Received Payment of the Bill remitted by *Charles Chareu*, on *David Liset*	35	6	3
Debtor, Cash (1). Creditor, accepted Bill payable to me (10).			
Received from Mr. *Andrew Hunter* 2 *l.* 11 *s.* 5 *d.* of Interest due upon his Bond at *Martinmass* last	2	11	5
Debtor, Cash (1). Creditor, *A. Hunter* (4).			
Because I leave the principal 100 *l.* in his Hands for Interest, I charge his Accompt to *Profit*, &c. (10) for one Years Interest to come	5		
Ditto 18th,			
Received Payment from *Jeremy Thomson* of what he owed me, by an accepted Assignation	90		
Debtor, Cash (1). Creditor, accepted Assignations (5).			
Ditto 19th,			
Sold for the Accompt in Company betwixt Mr. *David Johnston*, &c. 10 Pack of Sheep Skins, at 4 *l.* 10 *s. per* Pack, is 45 *l.* to *A. C.* for which he has given me an Assignation on *Alexander Black*, payable on Demand	45		
Alexander Black has accepted the Assignation, and taken a Receipt for 15 *l.* which is his $\frac{1}{3}$ thereof, and promises to pay the rest, *viz.* 30 *l.* in few Days.			
Debtors, *Alex. Black* his Accompt in Company (9) 15 *l.* —— his proper Accompt (6) 30 *l.* } Creditor, Goods in Company (9).			
Or you may make his *proper Accompt*, Debtor to the *Goods* for all, and Creditor by his *Accompt in Company*, for 15 *l.*			
Ditto 20th,			
James Balantine Proprietar of $\frac{1}{3}$ of the Ship, *Dragon* of *Queensferry*, and I who have $\frac{2}{3}$. have agreed to trade in Company with our Ship, the Management to be upon me, with an Allowance of $2\frac{1}{2}$ *per Cent.* Provision; but we are to be equal in the Merchandize,			

	l.	s.	d.
in Pursuance of which, he has given me 50 *l.* as his ½, which with 50 *l.* of my own, I'm to lay out upon Goods to be sent to *London* immediately : : :	50		

Debtor, Cash (1). Creditor, *James Balantine* his Accompt in Company (11).

Ditto 22d,

Received from Mr. *David Johnston*, Payment of what he owed for *Hero Moy*'s Accompt of Goods, in Manner following, *viz.* *l.* *s.*

Received in Cash : :	17	10
Rebated for 2 Months Advance :		10
	18	

Debtors, Cash (1), 17 *l.* 10 *s.* *Hero Moy*'s Accompt of Spiceries (8) 10 *s.*	18	18	Creditor, ditto *Johnston* (4).

Remitted to *Hero Moy* for his Accompt, 17 *l.* which at 2$\frac{3}{4}$ *d.* per *Guilder* is 177$\frac{2}{3}$ *Guilders*, in the Bills of Mr. *Andrew Cochran* upon *Jean Rivet*, payable upon Sight; which I have instantly paid to ditto *Cochran* : : | 17 | | |

Debtor, *Hero Moy* his Accompt current (10). Creditor, Cash (1).

Ditto 23d,

I have paid in Cash to Mr. *John Campbel*, the Price of the House in the *Canongate-head* purchased from him, with the first Quarter of the Annuity due to his Mother : : | 300 | 15 | |

Debtor. Mr. *John Campbel* (7). Creditor, Cash (1).

I have this Day also bought off the Annuity for 50 *l.* which I have paid thus, *viz.* in Cash 30 *l.* and an Assignation on *William Davidson* for 20 *l.* : : : | 50 | | |

Debtor, House in Land, &c. (3). Creditors, Cash (1) 30 *l.* *William Davidson* (5) 20 *l.*

Note, *William Davidson* possessing the House till *Whitsunday*, is Debtor to it for this ½ Years Rent, *viz.* 20 *l.* | 20 | | |

Ditto 25th,

Alexander Douglass at *Aberdeen* advises me, that he has put aboard the *William* and *Mary* of *Aberdeen*, *T. P.* Master, bound for *Rochel*, for my Accompt 10 Lasts of *Salmond*, which with all Charges and his Provision, amounts to 80 *l.* consigned to *Daniel Stratton* : | 80 | | |

Debtor, Voyage to Rochel, &c. (11). Creditor, *Alexander Douglass* (11).

This

This Day shipped aboard the *Succes* of *Burntisland*, *C. D.* Master, the following Goods consigned to *John Blackwood* my Factor there, to sell for my Accompt, viz.

		l.	s.	l.	s.	d.
Of fine Linnen 750 Yards	:	50				
Paid of Charges at shipping	:	1	15			
		51	15	51	15	

Debtor, Voyage to *London* (11). Creditors, Accompt of Linnen (2) 50 *l.* Cash (1) 1 *l.* 15 *s.*

Ditto 28th,

Received Advice from *Hero Moy* at *Amsterdam*, that he hath received from aboard the *Speedwell* of *Leith*, the 20 Packs of Wooll shipped, for the Accompt in Company, betwixt Mr. *David Johnston*, &c. and also that he hath sold the same for ready Money, the neat Proceeds of which, as by his Accompt amount to 2496 *Guilders*, which at present Rate of Exchange 20 *d. per Guilder*, is : 208

Debtor, *Hero Moy*, our Accompt current, &c. (11) Creditor, Voyage, &c. (11)

December 2d,

I have bought with ready Money for the Accompt in Company betwixt *James Balantine* and me, each ½ the following Goods, which I have shipped aboard our Ship the *Dragon* of *Queensferry*, *Alexander Stirling* Master, bound for *London*, consigned to *John Blackwood*, viz.

		l.	s.	d.	l.	s.	d.
Of Coarse Linnen 1000 Yards	:	50	00	00			
Brandy, 5 Hhds. at 16 l. is	:	80	00	00			
Paid of Charges of Merchandize	:	3	10	00			
		133	10	00	133	10	

Debtors, Voyage to London, &c. (11) Creditor, Cash (1)

Also *James Balantine*'s proper Accompt (11) Debtor, To his Accompt in Company (11) for his ½ of 33 *l.* 10 *s.* which is more than 100 *l.* [whereof I already received 50 *l.* from him.]

I have advanced moreover 20 *l.* for the Ship's Outset and Mens Wages, whereof 5 *l.* to the Master : : : 20

Debtors Ship the Dragon, &c. (3) for my ¼ 12 *l.* Creditor, *James Balantaine*, his proper Accompt ¼ 8 *l.* Cash (1) 20 *l.*

Because we are unequal Partners in the Ship, and equal in the Cargo, we have agreed to reckon the Ships Freight 30 *l.* whereof 15 belongs to my Partner, as equal Sharers in the Cargo; but because I have ¼ of the Ship more than he, therefore he owes me 3 *l. viz.* ¼ of 15 (the Justice whereof appears in this, that had 30 *l.* been received of the Freight from Strangers, 18 *l.* had belonged to me, as it

it is here, *viz.* 15 for my ½ of the Cargo, and 3 *l.* due out of my Partners Share for my ½ of the Ship more than he.

Debtors Voyage,&c.(11) 3 *l.* { Creditors, Ship,&c.(3) for my ½ 15 / *Ja. Balantine*, his Accompt in Comp.

James Ballantain, his proper Accompt 3 *l.* To Ship, &c. for my ½ over 3 *l.*

Note, Thus I keep the Product of my Ship and Merchandize distinct; and leave my Partner to keep Accompt for his Part of the Ship; I have an Accompt only for his Share of the Merchandize, and its Charges.

Or, I might do the last thus, *viz.* make Partners proper Accompt for 3 *l.* and Profits, *&c.* 15 *l.* Debtors to Ship for my Share of the Freight, but the other way shews the neat Product upon the Goods better.

Ditto 5th,

Remitted to my by *Charles Chareu* at *Bourdeanx*, for our Accompt of Exchange, 240 *Crowns*, which at 57½, is 57 *l.* 1 *s.* 8 *d.* in the Bills of *Jacob Lefevre* on *Archibald Stewart*, payable on Sight, which I have instantly received : : : : : 57 1 8

Debtor, Cash (1) Creditor *Charles Chareu*, our Accompt of Exchange (8)

Ditto 9th,

Received from Mr. *Andrew Cochran* 70 *l. viz.* 30 *l.* which I formerly paid for him, and 40 *l.* as my Share of the Sales of certain Goods in Company betwixt us, under his Management : : 70

Debtor, Cash (1) 70 *l.* Creditors *Ditto Cochran*'s proper Accompt (5) 30 *l.* ——my Accompt with him in Company (8) 40 *l.*

Received Payment from Mr. *Jamrs Murray* of what he owed for Goods in Company with Mr. *David Johnston*, &c. viz.

	l.	
Received in Cash : :	73	
Rebated for Advance : :	2	
	75	

Debtors, Cash (1) 73 *l.* Profit, &c. in Company (12) 2 *l.*
Creditor, *Ditto Murray* (5) 75 *l.* : : : 75

Ditto 16th,

Bought for the Accompt in Company, betwixt *Daniel Trader* and me 500 Yards of Linnen, at 2 *s.* 6 *d.* is 62 *l.* 10 *s.* from *D. K.* for which I have drawn Bill on *Ditto Trader*, payable on Demand. : : : : : 62 10

Debtors, Linnen in Company, &c. (10) Creditors, *Daniel Trader*'s Accompt in Company (8) 20 *l.* 16 *s.* 8 *d.* for his ⅓ and his proper Accompt (5) 41 *l.* 13 *s.* 4 *d.* for my ⅔

Dittor

	l.	s.	d.
Ditto 20th,			
Mr. *David Johnſton* has received from *Alexander Black* 15 *l.* which is his $\frac{1}{3}$ of a Sale of the Company's Goods, owing by *Ditto Black* upon Bill. : : : : :	15		
Debtor, Mr. *David Johnſton's* Accompt in Company *(9)*			
Creditor, *Alexander Black's* proper Accompt *(6)*			
Ditto 22d,			
Aſſigned *Daniel Trader*, for Accompt of his Concerns, on *William Wallace*, for 19 *l.* 3 *s.* 4 *d.* being *Ditto Teader's* $\frac{1}{3}$ of the Debt owing by *Ditto Wallace.*	19	3	4
Debtor, *Trader's* Accompt in Company (8) Creditor *William Wallace* (4).			
Ditto 24th,			
Drawn upon *Hero Moy* for the Accompt in Company betwixt Mr. *David Johnſton*, &c. payable at 10 Days ſight to *A. M.* or Order, 2496 *Guilders*, for which I have received ready Money : :	212		
Debtor, Caſh (1) Creditor, *Hero Moy* our Accompt current (11)			
Ditto 25th,			
Paid to Mr. *William Wallace* for the Accompt in Company with Mr. *David Johnſton*, &c. 80 *l.* out of the Company's Money in my Hands. : : : : :	80		
Debtor, Mr. *William Wallace* (4) Creditor, Caſh (1)			
Alſo I make the Partners *Accompts in Company* Debtors to their *proper Accompts* for their $\frac{1}{3}$ of that Money, which diſcharge both them of the Debt, and me of the Money, the $\frac{1}{3}$ is 26 *l.* 13 *s.* 3 *d.*			
Received Advice from *John Blackwood* at *London*, that he has received from aboard the *Succeſs of Burntiſland*, the Linnen and Brandy ſhipped for Accompt in Company betwixt *James Balantine* and me, and that he hath ſold the ſame for ready Money, the neat Proceeds by this Accompt is : : : :	200		
Debtor, *John Blackwood*, our Accompt current (12) Creditor, Voyage, &c. (11).			
Being ordered by *Alexander Douglaſs* at *Aberdeen*, to whom I owe 80 *l.* to remit the ſame for his Accompt to *John Blackwood* at *London.* I have this Day remitted to ditto *Blackwood*, for the foreſaid Accompt, 80 *l.* in my own Bill upon himſelf, for the Accompt betwixt *James Balantine* and me : : : :	80		
Debtor, *Alexander Douglas* (11) *John Blackwood*, our Accompt current (12)			
Alſo Profit, &c. (10) Debtor to *James Balantine's* proper Accompt (11) for 2 *l.* 10 *s.* his $\frac{1}{2}$ of the Exchange due for drawing 80 *l.* on our Factor.			

Ditto 26th,

Received Advice from *Daniel Stratton* Factor at *Rochel*, that he hath received my 10 Laſt Salmond ſent from *Aberdeen*, ſold the ſame for ready Money, and alſo according to my Order remitted the neat Proceeds to *Herman Van Rymer* at *Amſterdam*, being 1000 *Guilders* at 24 *d. per Guilder*, is : : : 100

Debtor, *Herman Van Rymer*, my Accompt current (7) Creditor, Voyage to *Rochel* (11).

Ditto 28th,

This Day Mr. *David Johnſton*, *Alexander Black* and I, have ballanced our Accompts in Company; the State of which is this, *viz.*, Upon the *Accompt of Goods in Company* (which are all diſpoſed of) I find gained 65 *l.* Upon the Voyage to *Rochel* there is gained 65 *l.* 6 *s.* Upon *Hero Moy* our Accompt current, there is gained by Exchange 4 *l.* Total of theſe Gains is 134 *l.* 6 *s.* : : : 134 6

Debt. Goods in Company (9) 65 *l.* Voyage, &c. (11) 65 *l.* 6 *s.* *Hero Moy*, our Accompt current (11) 4 *l.* Creditor, *Profit*, &c. in Company (12) 134 *l.* 6.

There is owing me of petty Charges paid out for the Company not yet ſtated 3 *l.* and my Proviſion at 2 *l. per Cent.* is 13 *l.* 6 *s* total 16 6

Debtor, Profit, &c. in Company (12) 16 *l.* 6 *s.* Creditors, Caſh (1) 3 *l.* Profit &c. (10) 13 *l.* 6 *s.*

The Ballance of the *Accompt of Profit*, &c. *in Company*, is 116 *l.* for which I have made *Profit*, &c. *in Company Debtor* to ſundry Accompts, *viz.* to the Partners *Accompt in Company*, and *Profit*, &c. each for $\frac{1}{3}$ thereof is 38 *l.* 13 *s.* 4 *d.*

I have cleared with the Partners, and made Payment of their ready Money in my Hands, as follows, *viz.*

To Mr. *David Johnſton* for *his Accompt in Company* in Caſh 55 *l.* 6 *s.* 8 *d.* and 7 *l.* 11 *s.* 4 *d.* he owes me by his *proper Accompt* total 62 18

To *Alexander Black* in Caſh 40 *l.* 6 *s.* 8 *d.* and 22 *l.* 11 *s.* 4 *d.* by his *proper Accompt* : : : : : 62 18

Debtors, Mr. *David Johnſton*'s Accompt in Company (9) 62 *l.* 18 *s.* *Alexander Black*'s Accompt in Company (9) 62 *l.* 18 *s.* Creditors, Caſh (1) 95 *l.* 13 *s.* 4 *d.* *David Johnſton*'s proper Accompt (5) 7 *l.* 11 *s.* 4 *d.* *Alexander Black*'s proper Accompt (6) 22 *l.* 11 *s.* 4 *d.*

Ditto 30th,

Being to ballance my Books, I have examined the State of the Accompts in Company with *Daniel Trader*, and have to charge the Accompt of Linnen in Company, for 1 *l.* 10 *s.* paid out of petty Charges, and 7 *l.* 1 *s.* for my Proviſion, Total 8 *l.* 11 *s.* 8 11

Debtor, *Linnen in Company* (10).

Creditors, Caſh (1) 1 *l.* 10 *s.*

Profit, &c. (10) 7 *l.* 1 *s.*

The

		s.	d.
The neat Gain on the Linnen disposed of, deducing all former Charges and Provision, amounts to 8 *l.* 19 *s.* : : : :		8	19
Debtor, *Linnen*, &c. (10).			
Creditors, *Daniel Trader*'s Accompt in Company (8) 2 *l.* 19 *s.* 8 *d.*			
Profit, &c. (10) for my $\frac{1}{3}$ 5 *l.* 19 *s.* 4 *d.*			

I have examined the Accompt with *James Balantine*, and have charged the *Voyage to London in Company*, for my Provision, *viz.* 3 *l.* 6 *s.* 8 *d.* after which the neat Gain is 33 *l.* 3 *s.* 4 *d.*

Debtor, Voyage &c. (11) for all			
Creditors, Profit, &c. (10) 19 *l.* 18 *s.* 4 *d.* *viz.* for my Provision, and $\frac{2}{3}$ of the Gain.			
James Balantine's Accompt in Company (11) 16 *l.* 11 *s.* 8 *d.*			

Follows the LEGER *of the foresaid* WASTE-BOOK, NO. II. *transported in Form. Where*, Observe, *That because in the* LEGER, NO. I. *I narrated Things at more length, I have in this, for a Variety, and to please every Body, made the following Narration as short as possible, by using the Phrase* sundry Accompts: *And when you look over this* LEGER, Remember, *That every Article of the Date* December 30th, *which you find not in the* WASTE *and* JOURNAL, *belongs to the State of the Ballance made then.*

Fol. 1st, *Edinburgh.*

				l.	*s.*	*d.*
1717		**Stock, Debtor.**				
Octr.	10	To ſundry Accompts, as *per* Journal :		810	7	11
Dec.	30	To Balance : : :	12	2566	14	6
		Summa		3377	2	5
1717		**Caſh, Debt.**				
Octr.	10	To Stock : :		496	5	2½
	—	To Claret Wine : :	2	70		
	—	To Raiſins : :	2	19		
	—	To Iron : :	2	60	10	
	12	To Mr. *James Murray* :	5	129	15	10
	—	To *Daniel Trader* :	5	23		
	—	To Mr. *David Johnſton* :	5	14	4	
	18	To *Herman Van Rymer* my Accompt current :	7	25	7	8
	22	To *Hero Moy* his Accompt of Spiceries :	8	24		
	—	To *David Johnſton* his Accompt in Company with *Alexander Black* : :	9	6		
	—	To *Alexander Black* his Accompt in ditto Company, *&c.*	9	37	12	8
	23	To broad Cloth in Company, *&c.* :	9	160		
	26	To broad Cloth in Company, *&c.* :	9	118	15	
	28	To Bottomry-Accompt :	4	56		
	30	To ſundry Accompts : :		66		
Nov.	2	To Goods in Company with Mr. *David Johnſton, &c.*	9	40		
	8	To Goods in Company with Mr. *David Johnſton, &c.*	9	85		
	15	To accepted Bills payable to me :	10	35	6	3
	—	To Mr. *Andrew Hunter* :	4	2	11	5
	18	To accepted Aſſignations :	5	90		
	20	To *James Balantine* his Accompt in Company with me	11	50		
	22	To Mr. *David Johnſton* : :	5	17	10	
Dec.	5	To *Charles Chareu* our Accompt of Exchange :	8	57	1	8
	9	To ſundry Accompts : :		70		
	—	To Mr. *James Murray* : :	5	73		
	24	To *Hero Moy* our Accompt current; *&c.*	11	212		
		Summa		2038	19	10

				l.	s.	d.
1717		**Stock,**	**Credit.**			
Octr.	10	By ſundry Accompts, as *per* Journal		3193	7	2½
Dec.	30	By Profit and Loſs	10	183	15	2½
			Summa	3377	2	5

1717		**Caſh,**	**Creditor.**				
Octr.	18	By Accompt of Houſhold Expences outſtanding		7	15		
	19	By *Hero Moy* of *Amſterdam* his Accompt of Spiceries		8	2	6	
	21	By broad Cloth in Company with *Daniel Trader*		9	129		8
	—	By *Thomas Dalziel*		6	118		
	23	By Goods in Company with Mr. *David Johnſton*, &c.		9	126		
	—	By *Daniel Trader* his Accompt in Company		8	113	4	8
	27	By broad Cloth in Company with *Daniel Trader*		9	1	10	
	30	By Linnen in Company with *Daniel Trader*		10	60		
Nov.	2	By Goods in Company with Mr. *David Johnſton*		9	40		
	4	By ſundry Accompts			60		
	8	By Voyage to *Amſterdam*, &c.		11	14	14	
	11	By ſundry Accompts			56	13	4
	12	By *Charles Chareu* our Accompt of Exchange		8	46	13	4
	22	By *Hero Moy* his Accompt current		10	17		
	23	By Mr. *John Campbel*		7	300	15	
	—	By Houſe in——Land, *&c.*		3	30		
	25	By Voyage to *London*		11	1	15	
Dec.	2	By ſundry Accompts			153	10	
	25	By Mr. *William Wallace*		4	80		
	28	By Profit, *&c.* with *David Johnſton*		12	3		
	—	By ſundry Accompts			95	13	4
	30	By Linnen in Company, *&c.*		11	1	10	
	30	By Balance		12	572	14	6½
			Summa		2038	19	10½

1717	Claret Wine,	Debt.	Hhds		l.	s.	d.
Octr. 10	To Stock		7	1	45	16	8
Dec. 30	To Profit and Loss			10	24	3	4
		Summa	7		70	0	0

1717	Tobacco,	Debt.	Hhds				
Octr. 10	To Stock		13	1	150	10	2

1717	Raisins,	Debt.	Bar.				
Octr. 10	To Stock		10	1	15	11	1
Dec. 30	To Profit, &c.			10	3	8	11
		Summa	10		19	0	0

1717	Broad-Cloath,		Yards				
Octr. 10	To Stock		107	1	82	3	4

1617	French Paper	Debt.	Bales				
Octr. 10	To Stock		14	1	54	10	6

1717	Iron,	Debt.	Stone				
Octr. 10	To Stock		350	1	53	15	
Dec. 30	To Profit and Loss				6	15	0
		Summa	350		60	10	0

1717	Accompt of Linnen-Cloth,	Debt.	Muſ. Yards	Holl. Yards	Lin. Yar.				
Octr. 10	To Stock		400	200	750		1	196	10	4

Claret alline, Cred.

1717			*Hhd.*	*l.*	*s.*	*d.*
Octr. 10	By Cash for		7	1	0	70

Tobacco, Cred.

1717			*Hhds*				
Dec. 30	By Ballance		13	12	150	10	2

Raisins, Cred.

1717			*Bar.*			
Octr. 10	By Cash for		10	1	19	

Broad-Cloth, Cred.

1717			*Yards*				
Octr. 21	By Broad-Cloth in Company with *Daniel Trader*		107	9	82	3	4

French Paper, Cred.

1717			*Bales*				
Dec. 30	By Ballance		1	14	12	54	10	6

Iron, Cred.

1717			*Stone*				
Octr. 10	By Cash for		350	1	60	10	

Accompt of Linnen-Cloth, Cred.

1717			*Mus. Yards*	*Holl. Yards*	*Linn. Yards*			
Nov. 25	By Voyage to *London*, &c.				750	11	50	
Dec. 30	By Ballance		400	200		12	146	10	4
		Summa	400	200	750		196	10	4

				pd. wgt.	l	s.	d.
1717		Cinnamon, Debt.					
Octr.	10	To Stock		74	1	43	

				Yards				
1717		*Daniel Stratton* at *Rochel*, my Accompt of Plaiden } Debt						
Octr.	10	To Stock		280	1	7	10	8
Dec.	30	To Profit and Loss			10	4	6	10
			Summa	280		11	17	6

				Stone				
1717		Lint, Debt.						
Octr.	10	To Stock		72	1	38	19	

1717		House in Castle-hill, Debt.						
Octr.	10	To Stock			1	230		

1717		*House in —Land*, near the Cannongate-head, Debt.						
Octr.	10	To Stock			1	300	15	
Nov.	23	To sundry Accompts, bought off the Annuity, *&c.*				50		
Dec.	30	To Profit and Loss			10	20		
			Summ			370	15	

1717		Ship the Dragon of Queensferry, Debt.						
Octr.	10	To Stock for ½ Parts of the said Ship			1	100		
Dec.	2	To Cash paid for her Out-set, *&c.* to *London* for my ⅗			1	12		
	30	To Profit and Loss			10	6		
			Summa			118		

1717		Voyage from Rochel to Amsterdam, in the Lamb of Cockeny, } Debt.						
Octr.	10	To Stock for 4 Packs Wooll			1	56	18	0½
Dec.	30	To Profit and Loss			10	13	1	11½
			Summa			70	0	

1717		**Cinnamon,** Credit.	*pd. wgt.*		*l.*	*s.*	*d.*
Octr.	30	By Cash, for	74	1	30		
Dec.	30	By Profit and Loss,		10	13		
		Summa	74		43		
1717		*Daniel Stratton* at *Rochel* my Accompt of Plaiden, Credit.	*Yards*				
Octr.	16	By Mr. *Thomas Richman* in part of a Bill on him,	280	6	11	17	6
1717		**Lint,** Credit.	*Stones*				
Octr.	30	By Cash, for	72	1	36		
Dec.	30	By Profit and Loss,		10	2	19	
		Summa	72		38	19	
1717		**House in Castle-Hill,** Credit.					
Dec.	30	By Ballance,		12	230		
1717		**House in — Land near the Canongate-Head,** Credit.					
Nov.	23	By *William Davidson* for ½ Years Rent at *Whitsunday* next,		5	20		
Dec.	30	By Ballance,			350	15	
		Summa			370	15	
1717		**Ship the Dragon of Queensferry,** Credit.					
Dec.	2	By sundry Accompts, for Freight on the Voyage to *London*, &c.			18		
Dec.	30	By Ballance for my ⅛		12	100		
		Summa			118		
1717		**Voyage from Rochel to Amsterdam, &c.** Credit.					
Octr.	12	By *Herman Van Rymer* my Accompt current, for Wooll 4 Packs,		7	70		

1717		Borrowes Accompt,	Debt.		l.	s.	d.
Octr.	10	To Stock, owing on the *Faulcon* of *Aberdeen*,		1	80		
1717		Magers Accompt,	Debt.				
Octr.	10	To Stock, consigned against *Thomas Arrowsmith*,		1	110		
1717		Delivery Accompt of buying,	Debt.				
Octr.	10	To Stock, for 100 Bolls Wheat to be received from *Thomas Dalziel*,		1	150		
1717		Moveables and Houshold Furniture,	Debt.				
Octr.	10	To Stock,		1	200		
1717		Mr. William Wallace,	Debt.				
Octr.	10	To Stock, payable at *Martinmass* next,		1	53	15	
Nov.	15	To Linnen in Company with *Daniel Trader*, on Demand,		10	57	10	
Dec.	25	To Cash, paid for the Company with *David Johnston*, &c.		1	80		
			Summa		191	5	
1717		Mr. Andrew Hunter,	Debt.				
Octr.	10	To Stock payable at *Martinmass* next by Bond,		1	102	11	5
Nov.	15	To Profit and Loss, for one Years Interest of his Bond at *Martinmass* next,		10	5		
Dec.	30	To Ballance owing him for the Accompt with *Daniel Trader* and me,		12	35		
			Summa		142	11	5
1717		John Paton,	Debt.				
Octr.	10	To Stock, due in 6 Months,		1	63	14	

Bottomry Accompt, Credit.

					l.	s.	d.
1717 *Oct.*	28	By ſundry Accompts received from *Laurence Lovemoney*,		10	80		

Wagers Accompt, Credit.

1717 *Oct.*	28	By Profit and Loſs,		10	10		

Delivery Accompt of buying, Credit.

1717 *Oct.*	21	By Wheat for 80 Bolls, received from *Thomas Dalziel*,		8	118		
		By *Thomas Dalziel* for 20 Bolls undelivered,		6	132		
			Summa		150		

Moveables and Houſhold Furniture, Credit.

1717 *Dec.*	30	By Ballance,		12	200		

Mr. William Wallace, Credit.

1717 *Nov.*	2	By Goods in Company with Mr. *David Johnſton*, &c. in one Month;		9	80		
Dec.	22	By *Daniel Trader's* Accompt in Company, *&c.* aſſigned,		8	19	3	4
	30	By Ballance,		12	92	1	8
			Summa		191	5	0

Mr. Andrew Hunter, Credit.

1717 *Nov.*	5	By Linnen in Company with *Daniel Trader*, payable in 20 Days,		10	35		
	15	By Caſh, paid Intereſt of his Bond preceeding *Martinmaſs* laſt.		1	2	11	5
Dec.	30	By Ballance, owing for my private Concern, by Bond,			105		
			Summa		142	11	5

John Paton, Credit.

1717 *Dec.*	30	By Ballance,		12	63	14	

1717		Mr. Andrew Cochran, Debt.		l.	s.	d.
Octr.	10	To Stock, - - - - - -	1	87	10	
Nov.	4	To Cash paid for him by Bill : : :	1	30		
		Summa		117	10	
1717		Mr. David Johnston, Debt.				
Octr.	10	To Stock, - - - - -	1	14	4	
	22	To *Hero Moy* of *Amsterdam*, his Accompt of Spiceries payable in 3 Moths : : :	8	18		
Nov.	2	To ditto his Accompt in Company with *Alexander Black*, &c. - - - -	9	40		
	8	To his Accompt in Company with *Alexander Black*, &c.	9	7	11	4
		Summa		79	15	4
1717		Daniel Trader, Debt.				
Octr.	10	To Stock due on demand - - -	1	23		
	30	To ditto his Accompt in Company - -	8	20		
Nov.	5	To Linnen in Company with him ——, by Bill on him,	10	20		
		To his Accompt in Company - - -	8	11	13	4
		Summa		72	13	4
1717		William Davidson, Debt.				
Octr.	10	To Stock, at *Martinmass* next - - -	1	20		
Nov.	23	To House in —— Land, &c. - - -	3	20		
		Summa		40		
1717		Accepted Assignations, Debt.				
Octr.	10	To Stock, due by *Jeromy Thomson* - - -	1	90		
1717		James Murray, Debt.				
Octr.	10	To Stock, - - - - -	1	129	15	10
	26	To Goods in Company with *David Johnston* in 6 Months	9	48		
Nov.	11	To Goods in ditto Company; payable with the other	9	27		
		Summa		204	15	10

1717		Mr. Andrew Cochran, Cred.	l.	s.	d.
Octr.	16	By ditto *Cochran*, my Accompt with him in Company	8	40	
Dec.	9	By Cash - - - - - -	1	30	
	30	By Ballance - - - - - -	12	47	10
		Summa		117	10

1717		Mr. David Johnston, Cred.			
Octr.	12	By Cash - - - -	1	14	4
Nov.	2	By his Accompt in Company, *&c.* for his Share of 40 *l.*	9	13	6 8
	22	By sundry Accompts for *Hero Moy*'s Goods - -		18	
Dec.	25	By his Accompt in Company, *&c.* - - -	9	26	13 4
	28	By his Accompt in Company - - -	9	7	11 4
		Summa		79	15 4

1717		Daniel Trader, Cred.			
Octr.	12	By Cash - - - - - -	1	23	
Nov.	5	By his Accompt in Company, for his $\frac{1}{5}$ of the Bill, *&c.*	8	6	13 4
Dec.	16	By Linnen in Company, *&c.* for my $\frac{1}{5}$ - - -	10	41	13 4
	30	By Ballance - - - - -	12	3	6 8
		Summa		74	13 4

1717		William Davidson, Cred.			
Nov.	23	By House in —— Land, *&c.* for my Assignation -	3	20	
Dec.	30	By Ballance due at *Whitsunday* next - -	12	20	
		Summa		40	

1717		Accepted Assignations, Cred.			
Nov.	18	By Cash received for *Jeromy Thomson* - -	1	90	

1717		James Murray, Cred.			
Octr.	12	By Cash - - - - -	1	129	15 10
Dec.	9	By sundry Accompts - - - -		75	
		Summa		204	15 10

1717		Mr. Adam Blackadder,	Debt.			l.	s.	d.
Octr.	10	To Stock			1	110		

1717		George Gordon,	Debt.					
Octr.	10	To Stock, due in 2 Months			1	24	8	

1717		*Daniel Stratton* at *Rochel*, my Accompt current,	Debt.	Cro.				
Octr.	10	To Stock		685	1	162	3	11½
Dec.	30	To Profit &c. gain'd on Exchange			10		9	9½
			Summa	685		162	13	9

1717		Mr. Thomas Richman,	Debt.					
Octr.	16	To sundry Accompts as *per* Journal				127	1	3

1717		Alexander Black,	Debt.					
Octr.	22	To his Accompt in Company with *David Johnston*, &c.			9	22	7	4
Nov.	2	To his Accompt in Company, &c.			9	40		
—	8	To his Accompt in Company, &c.			9	7	11	4
—	12	To Goods in Company with himself, &c.			9	30		
			Summa			99	18	8

1717		Thomas Dalziel,	Debt.					
Octr.	21	To Cash for 80 Bolls Wheat received			1	118		
—		To Delivery-Accompt of buying, for 20 Bolls undelivered, &c.			4	32		
Dec.	30	To Ballance			12	100		
			Summa			250		

1717		Mr. Adam Blackadder, Cred.			*l.*	*s.*	*d.*
Dec.	30	By Ballance : : : :			12 1	10	

1717		George Boyon, Cred.					
Dec.	30	By Ballance : : : :			12	24	8

1717		*Daniel Stratton* at *Rochel*, my Accompt current, Cred.	*Crow.*				
Octr.	16	By fundry Accompts for a Bill as *per* Journal :	200			47	10
		By Mr. *Thomas Richman* for part of a Bill : :	485			115	3 9
		Summa	685			162	13 9

1717		Mr. Thomas Richman, Cred.					
Octr.	10	By Stock, payable at *Martinmass* next : :			1	45	
Dec.	30	By Ballance : : : : :			12	82	1 3
		Summa				127	1 3

1717		Alexander Black, Cred.					
Octr.	10	By Stock : : : :			1	22	7 4
Nov.	2	By his Accompt in Company, *&c.* his Share of 45 *l.*			9	13	6 8
Dec.	20	By *David Johnston*'s Accompt in Company : :			9	15	
	25	By his Accompt in Company, *&c.* : : :			9	26	13 4
	28	By his Accompt in Company : : :			9	22	11 4
		Summa				99	18 8

1717		Thomas Dalziel, Cred.					
Octr.	10	By Stock : : : :			1	250	

					£	s.	d.
1717		Mr. Robert Blackwood,	Debt.				
Octr.	26	To Accompt broad Cloth in Company with *Daniel Trader*			9 71	5	
1717		Monsieur St. Bonnet,	Debt.				
Dec.	30	To Balance, due 7th *January* next			12 50		
		Charles Chareu at *Bourdeaux*, his Accompt current,	Debt.				
1717							
Octr.	16	To *Daniel Stratton* my Accompt current			6	1 15	5
Dec.	30	To our Accompt of Exchange			8	12	1
				Summa		2 7	6
		Herman Van Rymer at *Amsterdam*, my Accompt current,	Debt.	*Guilders*			
1717							
Octr.	12	To Voyage from *Rochel* to *Amsterdam*		800	3	70	
Dec.	26	To Voyage to *Rachel*, Ct. 24 d.		1000	11	100	
				Summa	1800	170	
		Mr. Andrew Coupar,	Debt.				
1717							
Dec.	30	To Balance			12	10	
				Summa			
		Mr. John Campbel,	Debt.				
1717							
Nov.	23	To Cash paid him			1	300	15
Dec.	30	To Balance			12	8	
				Summa		308	15
		Accompt of Houshold Expences out-standing,	Debt.				
1717							
Octr.	18	To Cash			1	15	

					l.	*s.*	*d.*
		Mr. Robert Blackwood, Credit.					
1717 *Octr.*	10	By Stock, payable 22d inſtant,	:	:	1 71	5	
		Monſieur St. Bonnet, Credit.					
1717 *Dec.*	10	By Stock, payable 7th *January* next		:	1 50		
		Charles Charen at *Bourdeaux*, his Accompt current, Credit.					
1717 *Octr.*	10	By Stock	:	:	1	15	5
Dec.	30	By our Accompt of Exchange, for his Share of Gain			8		6
	—	By Balance, for 1 $\frac{11}{12}$ *Crown*, at 57 *d.*		:	12		6
				Summa		2	7 6
		Herman Van Rymer at *Amſterdam*, my Accompt current, Credit.			*Guil*		
1717 *Octr.*	10	By Stock	:	:	528	1 44	5 2
	18	By Caſh, for a Bill on him at 1 *s.* 10 *d. per Guilder*			277	1 25	7 10
Dec.	30	By Balance, at 24 *d.*	:	:	1000	12 100	
		By Profit, *&c.*				10	7
				Summa	1800	170	
		Mr. Andrew Coupar, Credit.					
1717 *Dec.*	10	By Stock due at *Martinmaſs* next		:		1 10	
		Mr. John Campbel, Credit.					
1717 *Octr.*	10	By Stock	:	:	1	300	15
Nov.	8	By Voyage to *Amſterdam*, &c.		:		11 8	
				Summa		308	15
		Accompt of Houſhold Expences out-ſtanding, Credit.					
1717 *Octr.*	10	By Stock	:	:	:	1 15	

							l.	s.	d.
		Charles Chareu at *Bourdeax*, our Accompt of Exchange in Company, each ½ } Debt.		*Crowns*					
1717 *Octr.*	16	To *Daniel Stratton* at *Rochel*, my Accompt current, at 57 *d. per Crown* : }		192 11/17	6		45	14	7
Nov.	12	To Cash, for a Bill at 56 *d. per Crown* :		200	1		46	13	4
Dec.	30	To sundry Accompts, gained on the Exchange						12	1
			Summa	392 11/17			93		
		Mr. *Andrew Cochran*, my Accompt with him in Company, each ½ } Debt.							
1717 *Octr.*	16	To ditto *Cochran* his proper Accompt :			5		40		
Nov.	4	To Cash, paid for my ½, *&c.* :			1		30		
Dec.	30	To Balance : : :			12		40		
			Summa				110		
		Hero Moy of *Amsterdam*, his Accompt of Spiceries. } Debt.		*Mace Bar.*	*Cloves Barr.*				
1717 *Octr.*	19	To Cash, for Charges at Receipt of		10	8		1	2	6
Nov.	22	To Mr. *David Johnston*, for Rebatement							10
Dec.	30	His Accompt current for the neat Proceeds of what is sold : : }					5	39	4
			Summa	10	8			42	
1717		Wheat, Debt.		*Bolls*					
Octr.	21	To Delivery Accompt of buying for :		80		4	118		
		Daniel Trader, his Accompt with me in Company, } Debt.							
1717 *Octr.*	27	To Cash : : :				1	113	4	8
Nov.	5	To his proper Accompt for his Share of a Sale of the Linnen				5	6	13	4
Dec.	22	To *William Wallace*, by Assignation :				4	19	3	4
	30	To Balance : :				12	29	13	
			Summa				168	14	4

Charles Chareu at *Bourdeaux*, our Accompt of Exchange in Company, each ½ } Credit.

			Crowns		*l.*	*s.*	*d.*
1717							
Nov.	4	By accepted Bills, payable at 10 Days sight at 56 1/7 *d.*	150	10	35	6	3
Dec.	5	By Cash at 57 1/14 *d. per Crown* remitted to me	240	1	57	1	8
	30	By his Accompt current, at 57 *d. per Crown*	2 3/7	1		12	1
		Summa	392 3/7		93		

Mr. *Andrew Cochran*, my Accompt with him in Company, each ½ } Credit.

1717					
Dec.	9	By Cash received to Accompt	1	40	
	30	By Balance	12	70	
		Summa		110	

Hero Moy of *Amsterdam*, his Accompt of Spiceries, } Debt.

			Mace Bar.	*Cloves Barrel*			
1717							
Octr.	22	By Cash, for	6		1	24	
	—	By Mr. *David Johnston*, in 3 Months		4	5	18	
		Undisposed of	4	4			
		Summa	10	— 8		42	

1717		Wheat, Credit.	*Bolls*			
Octr.	30	By Balance	80	12	118	

Daniel Trader, his Accompt with me in Company, } Credit.

1717							
Octr.	21	By broad Cloth in Company, for his ⅓	9		105	12	
	27	By ditto broad Cloth, for his ⅓ of the neat Gain	—		7	12	8
	30	By ditto his proper Accompt for ⅓ of the Linnen, *&c.*	5		20	—	
Nov.	5	By his proper Accompt for ⅓ of more Linnen bought	5		11	13	4
Dec.	16	By Linnen in Company for his ⅓	10		20	16	8
	30	By Linnen, *&c.* for his ⅓ of the neat Gain of what's sold	10		2	19	8
		Summa			168	14	4

Broad Cloth in Company with *Daniel Trader*, wherein he 1/3 and I 2/3 } Debr.

			Pieces		L.	s.	d.
1717							
Octr.	21	To sundry Accompts,	22	1	316	16	
	27	To sundry Accompts for Charges and Provision,			10	6	
	—	To sundry Accompts for the neat Gain,			22	18	
		Summa	22		350		

Goods in Company with *David Johnston*, *Alexander Black*, and my self, each 1/3 } Debt.

1717					
Octr.	22	To ditto *Johnston* his Accompt in Company for 6 Hhds. Claret Wine,		54	
	25	To Cash for 40 Packs Sheeps Skins,	1	126	
Nov.	2	To sundry Accompts for 20 Packs of Wooll, at 6 *l.* per Pack, is		120	
Dec.	28	To Profit, *&c.* in Company for the neat Gain,	12	65	
		Summa		365	

David Johnston his Accompt in Company with *Alexander Black* and me, each 1/3 } Debt.

1717						
Nov.	2	To his proper Accompt for his Share of 40 *l. &c.*	5	13	6	8
	11	To Cash,	1	28	6	8
Dec.	20	To *Alexander Black*'s proper Accompt, for what he received from him,	6	15		
	25	To his proper Accompt, *&c.*	5	26	13	4
	28	To sundry Accompts,		62	18	
		Summa		146	4	8

Alexander Black his Accompt in Company with *David Johnston* and me, each 1/3 } Debt.

1717						
Nov.	2	To his proper Accompt for his Share of 40 *l. &c.*	6	13	6	8
	11	To Cash,	1	28	6	8
	19	To Goods in ditto Company,		15		
Dec.	25	To his proper Accompt, *&c.*	6	26	13	4
	28	To sundry Accompts.		62	18	
		Summa		146	4	8

1717					£	s.	d.
	Broad Cloth in Company with *Daniel Trader*, whereof he $\frac{1}{3}$ and I $\frac{2}{3}$ } Credit.		*Pieces*				
Octr. 23	By Cash,		10	1	160		
26	By sundry Accompts,		12	7	190		
		Summa	22		350		

1717					£	s.	d.
	Goods in Company with *David Johnston*, *Alexander Black* and me, each $\frac{1}{3}$ } Credit.						
Octr. 26	By *James Murray* for 4 Hhds. Wine payable in 6 Months,			5	48		
Nov. 2	By Cash, for 10 Pack of Sheep Skins,			1	40		
8	By Voyage to *Amsterdam*, *&c.* for 20 Pack Wooll,			11	120		
	By Cash, sold 20 Packs of Sheeps Skins,			1	85		
11	By Mr. *James Murray*, 2 Hhds. Wine,			5	27		
19	By sundry Accompts, for 10 Packs of Sheeps Skins,				45		
		Summa			365		

1717					£	s.	d.
	David Johnston his Accompt in Company with *Alexander Black* and me, each $\frac{1}{3}$ } Credit.						
Octr. 22	By sundry Accompts,				60		
Nov. 2	By his proper Accompt, for his $\frac{1}{3}$ of 20 Packs Wooll,			5	40		
8	By his proper Accompt for his $\frac{1}{3}$ of Charges, *&c.*			5	7	11	4
Dec. 28	By Profit, *&c.* in Company,			12	38	13	4
		Summa			146	4	8

1717					£	s.	d.
	Alexander Black his Accompt in Company with *David Johnston*, &c. } Credit.						
Octr. 22	By sundry Accompts,				60		
Nov. 2	By his proper Accompt for $\frac{1}{3}$ of 20 Packs Wooll,			6	40		
8	By his proper Accompt for $\frac{1}{3}$ of Charges, *&c.*			6	7	11	4
Dec. 28	By Profit, *&c.* in Company,			12	38	13	4
		Summa			146	4	8

1717		**Profit and Loss,**	Debt.			*l.*	*s.*	*d.*
Octr.	20	To Wagers Accompt : : : :			4	10		
Dec.	25	To *James Balantine*, his proper Accompt : :			11	2	10	
	30	To Cinnamon : : : :			3	13		
—		To Lint : : : : :			3	2	19	
—		To *Herman Van Rymer*, my Accompt current :			7	0	7	
—		To Stock for neat Gain : : :			1	183	15	2½
			Summa			212	11	2½

1717		*Hero Moy*, his Accompt current,	Debt.						
Octr.	28	To Bottomry Accompt for a Bill : : :			4	24			
Nov.	21	To Cash remitted in a Bill payable on sight : :			1	17			
			Summa			41			

1717		**Linnen in Company with Daniel Trader,**	Debt.	*Yards*					
Octr.	30	To Cash, at 3 *s.* No. 1. : : :		400	1	60			
Nov.	5	To Mr. *Andrew Hunter*, at 3 *s.* 6 *d.* No. 2. :		200	4	35			
Dec.	16	To sundry Accompts, at 2 *s.* 6 *d.* No. 3. :		500		62	10		
—	30	To sundry Accompts for Charges, Provision, and neat Gain : : : :				17	10		
			Summa	1100		175	00		

1717		**Accepted Bills,** *payable to me,*	Debt.						
Nov.	4	To *Charles Chareu*, our Accompt of Exchange payable by *David Liset* at 10 Days sight : :			8	35	6	3	

1717		Profit and Loss, Cred.		l.	s.	d.
Octr.	27	By Broad-Cloth in Company with *Daniel Trader* for my Provision : : : : :	9	8	16	
—		By *Ditto* Broad-Cloth for my $\frac{1}{3}$ of the neat Gain	9	15	5	4
Nov.	15	By Mr. *Andrew Hunter* : : : : :	4	5		
Dec.	28	By Profit, *&c.* with *David Johnston*, &c. : :	12	51	19	4
	30	By Wine : : : :	2	24	3	4
—		By Raisins : : : : :	2	3	8	11
—		By Iron : : : : :	2	6	15	
—		By *Daniel Stratton* my Accompt Plaiden : :	3	4	6	10
—		By House in —— Land : : : : :	3	20		
—		By Ship *Dragon of Queensferry* : : :	3	6		
—		By Voyage from *Rochel* to *Amsterdam* : : :	3	13	1	$11\frac{1}{3}$
—		By *Daniel Stratton* my Accompt currant : :	6	00	9	$9\frac{1}{3}$
—		By *Charles Chareu* our Accompt of Exchange : :	8	00	6	0
—		By Linnen in Company with *Daniel Trader* : :	10	13	0	4
—		By Voyage to *London* in company with *James Balantine*	11	19	18	4
—		By Voyage from *Aberdeen* to *Rochel* : :	11	20		
		Summa		212	11	$2\frac{1}{3}$

1717		*Hero Moy*, his Accompt current, Cred.				
Dec.	30	By his Accompt of Spiceries : : :	8	39	4	
—		By Ballance : : : :		1	16	
		Summa		41	00	

1717		Linnen in Company with Daniel Trader $\frac{1}{3}$ and me $\frac{2}{3}$ Cred.	*Yards*			
Nov.	5	By Ditto *Traders* proper Accompt at 4 *s. per* Yard No. 1. : : : :	100	5	20	
—	15	By Mr. *William Wallace*, 300 Yards at 3 *s.* 10 *d.* No. 1. : : : :	300	4	57	10
Dec.	30	By Ballance of No. 2. and 3. : : :	700		97	10
		Summa	1100		175	00

1717		Accepted Bills *payable to me*, Cred.				
Nov.	15	By Cash received from *David Liset* : :	1	35	6	3

1717	Voyage to Amsterdam, *in the* Speedwell *of* Leith, *for the Accompt of Company with Mr.* David Johnston, *&c.* } Debt.				*l.*	*s.*	*d.*
Nov. 8	To sundry Accompts for 20 Packs of Wooll and Charges				142	14	
Dec. 28	To Profit, *&c.* in Company			12	65	6	
			Summa		208	0	
1717	*James Balantine*, his Accompt with me in Company ½ } Debt.						
Dec. 30	To Ballance			12	98	6	8
1717	*Alexander Douglass*, at Aberdeen, Debt.						
Dec. 25	To *John Blackwood*, our Accompt current for Company with *James Balantine*, &c. }			12	80		
1717	Voyage from Aberdeen to Rochel, &c. Debt.						
Nov. 25	To *Alexander Douglass* for 10 Last Salmond				80		
Dec. 30	To Profit and Loss			10	20		
			Summa		100	0	
1717	Voyage to London, &c. Debt.						
Nov. 25	To sundry Accompts for 750 Yards Linnen				51	15	
1717	*Hero Moy*, our Accompt current for Company with *David Johnston*, &c. } Debt. *Guil.*						
Nov. 28	To Voyage to *Amsterdam*, &c. at 20 *d. per Guilder*			2496	208		
Dec. 28	To Profit *&c.* in Company, *&c.* gained by Exchange			12	4		
			Summa	2496	212		
1717	*James Balantine*, his proper Accompt, Debt.						
Dec. 2	To sundry Accompts for Charges, *&c.* on the Voyage to *London*, }				27	15	
1717	Voyage to London, &c. for *James Balantine* and me each ½ } Debt.						
Dec. 2	To Cash paid for 1000 Yards Linnen, and 5 Hhds Brandy, with Charges }				133	10	
	To sundry Accompts for Freight				30		
30	To sundry Accompts for my Provision, and the neat Gain				36	10	
			Summa		200	00	

1717	Voyage to Amsterdam, &c. *for the Company with* David Johnston.	Cred.		*l.*	*s.* *d.*
Nov. 28	By *Hero Moy*, our Accompt current, for 20 Packs Wooll			208	
1717	*James Balantine*, his Accompt with me ½	Cred.			
Nov. 20	By Cash			1	50
Dec. 2	By sundry Accompts, for the Voyage to *London*, &c.				31 15
30	By Voyage to *London*, in Company, &c. for his ½ gain'd				16 11 8
			Summa		98 06 8
1717	Alexander Douglas at Aberdeen,	Cred.			
Nov. 25	By Voyage from *Aberdeen* to *Rochel*				80
1717	Voyage from Aberdeen to Rochel, &c.	Cred.			
Dec. 25	By *Herman Van Rymer*, my Accompt current, my Salmond being all sold			7	100
1717	Voyage to London,	Cred.			
Dec. 30	By Ballance for 750 Yards Linnen			12	51 15
1717	*Hero Moy*, our Accompt current, &c.	Cred.	*Guil*		
Dec. 24	By Cash, for a Bill		2496	01	212
1717	*James Balantine*, his proper Accompt,	Cred.			
Dec. 25	By Profit and Loss			10	2 10
30	By Balance			12	25 5
			Summa		27 15
1717	Voyage to London, *for* James Balantine *and me each* ½	Cred.			
Dec. 25	By *John Blackwood*, our Accompt current, our Goods being all sold			12	200

			l.	s.	d.
1717		Profit and Loss in Company with David Johnston, &c. } Debr.			
Dec.	28	To Mr. *James Murray* for Rebatement : :	5	2	
	28	To sundry Accompts for petty Charges, and my Provision		16	6
		To sundry Accompts for the neat Gain : :		116	
		Summa		134	6
1717		*John Blackwood*, our Accompt current, *for the Company with* James Balantine. } Debr.			
Dec.	25	To Voyage to *London*, for *ditto* Company : : :	11	200	
1717		Balance, Debr.			
Dec.	30	To Cash, : : : : : :	1	572	14 6½
		To Tobacco, Hhds : : :	2	150	10 2
		To *French* Paper, Bales : : :	2	54	10 6
		To Linnen Cloth, Yards : : :	2	146	10 4
		To House in *Castle-hill* : : : :	3	230	
		To House in —— Land : : : : :	3	350	15
		To Ship *the Dragon of Queensferry*, for my ⅓ :	3	100	
		To Accompt of Moveables, *&c.* : :	4	200	
		To Mr. *William Wallace*, : : :	4	92	1 8
		To Mr. *Andrew Hunter* : : : :	4	105	
		To *John Paton* : : : : :	4	63	14
		To Mr. *Andrew Cochran* : : : :	5	47	10
		To *Daniel Trader* : : : : :	5	3	6 8
		To *William Davidson* : : : :	5	20	
		To Mr. *Adam Blackadder* : : :	6	110	
		To *George Gordon* : : : :	6	24	8
		To Mr. *Thomas Richman* : : : :	6	82	1 3
		To *Charles Chareu*, his Accompt current 1 $\frac{11}{12}$ *Crowns* at 57 *d.*	7		6 0½
		To *Herman Van Rymer*, my Accompt current 1000 *Guilders* at 24 *d.* : : : : : }	7	100	
		To Mr. *Andrew Cochran*, my Accompt with him :	8	70	
		To Wheat, 80 Bolls : : :	8	118	
		To Linnen in Company with *Daniel Trader* 700 Yards of No. 1 and 2. : : : }	10	97	10
		To *Hero Moy*, his Accompt current : :	10	1	6
		To *James Balantine*'s proper Accompt : : :	11	25	5
		To *John Blackwood*, our Accompt current, *&c.* : :		120	
		To Voyage to *London*, 750 Yards Linnen : : :	11	51	15
		Summa		2937	14 2

1717		**Profit and Loss**, *in Company with* David Johnston, *&c.* Cred.		*l.*	*s.*	*d.*
Dec.	28	By ſundry Accompts, *&c.* : : :		134	6	

1717		*John Blackwood*, our Accompt current, *&c.* Cred.				
Dec.	25	By *Alexander Douglas* : : : :	11	80		
	30	By Balance : : :		120		
		Summa		200		

1717		**Balance**, Cred.				
Dec.	30	By *Andrew Hunter* : : : :	4	35		
		By Mr. *St. Bonnet* : : :	7	50		
		By M[illegible] *Andrew Couper* : : : :	7	10		
		By Mr. *John Campbel.* : : : :	7	8		
		By Mr. *Andrew Cochran*, my Accompt with him in Company : : : : :	8	40		
		By *Daniel Trader*'s Accompt with me in Company	8	29	13	
		By *Thomas Dalziel* : : : :	8	100		
		By *James Balantine*'s Accompt in Company with me ½	11	98	6	8
		By Stock for my preſent free Eſtate : :		2566	14	6
		Summa		2937	14	2

INDEX OF THE LEGER, No. II.

A.

ACCEPTED Assignations 5
Accepted Bills 10

B.

BOTTOMRY Accompt 4
Mr. *Adam Blackadder* 6
Alexander Black 6
Mr. *Robert Blackwood* 7
Alex. Black's Accompt in Company 9
Ja. Balantin's, Accompt in Company 11
——his proper Accompt 11
John Blackwood, our Accompt current, &c. 12
Balance, 12

C.

CASH 1
Claret Wine 2
Broad-Cloth 2
Accompt of Linnen Cloth 2
Cinnamon 3
Mr. *Andrew Cochran* 5
Charles Chareu at *Bourdeaux*, his Accompt current 7
Mr. *Andrew Couper* 7
Mr. *John Campbel* 7
Charles Chareu, our Accompt of Exchange 8
Mr. *Andrew Cochran*, my Accompt with him in Company 8
Broad-Cloth with *Daniel Trader* 9

D.

DELIVERY of Buying 4
William Davidson 5
Thomas Dalziel 6
Alexander Douglas 11

E.

ACCOMPT of Houshold Expences outstanding 7

F.

G.

George Gordon 6
Goods in Company with *Alexander Black*, &c. 9

H.

HOUSE in — Land near the *Canongate-head* 3
House in *Castle-hill* 3
Mr. *Andrew Hunter* 4

L

IRON 2
Mr. *David Johnston* 5
——his Accompt in Company 9

K.

M.

LINT 2
Linnen in Company with *Daniel Trader* 10

M.

MOVEABLES and Houshold Furniture 4
James Murray 5
Hero Moy of *Amsterdam*, his Accompt of Spiceries 8
——— his Accompt current 10
———our Accompt current, *&c.* 11

N.

O.

P.

FRENCH Paper 2
John Paton 4
Profit, *&c.* 10
Profit, *&c.* in Company with *David Johnston*, &c. 12

Q.

R.

RAISINS 1
Mr. *Thomas Richman* 6

S.

STOCK 1
Daniel Stratton at *Rochel*, my Accompt of Plaiden 1
Ship the *Dragon* of *Queensferry* 3
Daniel Stratton, my Accompt current 6
Monsieur *St. Bonnet* 7

T.

TOBACCO 2
Daniel Trader 5
——— his Accompt in Company 8

W.

WAGERS Accompt 4
Mr. *William Wallace* 4

V.

VOYAGE from *Rochel* to *Amsterdam* in the *Lamb of Cokeny* 3
Herman Van Rymer, my Accompt current 7
Voyage to *Amsterdam* in Company, *&c.* 11
Voyage from *Aberdeen*, &c. 11
Voyage to *London*, &c. 12
Voyage to *London*, for *James Balantine* and me 13

TABLE

TABLE

Of all the Variety of *Cases* or *Examples* that are contained in the proceeding WASTE-BOOKS, digested under distinct Heads, with the Date, by which you may find them, in Order to their being compared with the JOURNAL and LEGER; the first WASTE-BOOK ends with *October* 8th, therefore what you find dated after this, must be sought in the second WASTE-BOOK, the Conveniency of this TABLE I have shown in the PREFACE.

Proper Domestick Trade; and first of Buying and Selling.

CASES.

1 *GOODS bought and paid in Cash,* May 8.
2 *Goods bought on Time,* May 4.
3 *Goods bought, and part paid in Cash, part owing,* May 6.
4 *Goods bought, and paid in Cash and Bills,* May 8.
5 *Goods bought, and part paid in Money and Bills, part owing,* May 14.
6 *Goods bought, and part paid in Money, the rest to discompt what the Seller owes me,* June 3. *or you may call this receiving Payment of a Debt in Goods, and giving the Overplus.*
7 *Bought part of a Ship, which being ready to sail, I'm assigned to the Freight,* August 29.
8 *Goods bought for Cash, but immediately sold to another, who receives them,* June 21.
9 *Goods sold for Cash,* May 2.
10 *Goods sold on Time,* May 2.
11 *Goods sold and part paid part owing,* May 6.
12 *Goods sold, and received a Bill in Payment,* May 7.
13 *Goods sold, and received part in Money and Bills, the rest owing,* May 8.
14 *Goods sold and received part in Cash the rest I owed the Seller (which is paying a Debt with Goods, and receiving the Overplus)* August 14.
15 *Goods bartered for other Goods* May 11, *Overplus received* May 1, *the Goods received immediately disposed of* May 20, *paid Overplus* May 20, *owing the Overplus,* June 25.
16 *Goods bought to be delivered at a certain Time, and part of the Value advanced. See* June 3, 12. July 2.
17 *Received the Goods formerly bought on fore-hand Bargain* July 17, August 3, *by consent there is less received then was agreed for* October 21.
18 *Goods sold, to be delivered, and part receivrd per Advance,* June 7, 15.
19 *Delivered the Goods sold on fore-hand Bargain* July 17, *also more sold and delivered. When Part is retained by Consent. See* August 3.
20 *Protested against the Seller for not delivering Goods bought on fore-hand Bar-*

Bargain, and have charged him for the Value and Penalty, July 22.

21 *Bought a Houſe with the Burden of an Annuity, and am aſſigned to ſome bygone Rent owing by the preſent Poſſeſſor,* Auguſt 26, *bought off the Annuity* November 23.

Paying of Debts.

22 *Paid a Debt with Caſh* May 24, *with Caſh and Bills* May 30, *Rebatement allowed* June 6, *with Money and Goods* June 10. See Caſe 15. with foreign Coin, *upon which I've loſt,* Auguſt 8.

23 *Paid a Debt owing for Charges of Merchandize* September 6, *for Houſhold Expences* October 18.

24 *Received Payment of a Debt in Caſh,* May 24, and ſee November 15 *in Bill payable on demand, which is accepted to diſcompt what I owe that Perſon on whom the Bill is, but my Debt not being yet payable to him, I charge him for Intereſt* May 28, *in Money and Goods* June 12, *Rebatement allowed* June 17.

Borrowing and Lending Money on Bond or Bottomry, and what relates thereto.

25 *Money lent on Bond* June 18, *bygone Intereſt paid to me, and the next Terms Intereſt placed to Accompt* November 15.

26 *Money lent on Bottomry* June 22, 25. Auguſt 13, *Ship loſt* July 4, *the Money paid to my Factor* July 16. See Caſe 58. *Received Payment my ſelf by Bill and Caſh,* October 28.

Inſurance.

27 *Inſured Goods to another, and received the* Præmium June 28, July 10, *the* Præmium *owing* July 16.

28 *Paid loſt Goods which I had inſured,* July 30.

Note, When any thing is inſured to me the *Præmium* is charged to that Thing as Expences. *See Caſe* 40.

Wagering.

29 *Conſigned Money upon a Wager,* June 22.

30 *Wagered upon Parole,* July 25.

31 *Gained a Wager, formerly conſigned upon* July 15, *which was one Parole and now paid,* Auguſt 19.

32 *Loſt a Wager conſigned upon* July 12, *which was upon Parole, and now paid,* Auguſt 19.

33 *Money gained upon a Wager immediately decided* July 12.

A few ſingular Caſes.

34 *Got a Houſe in Legacy, and am burdened with the Payment of ſome Money,* Auguſt 29.

35 *Got a Legacy due by the Executor,* September 2.

36 *Taken an Apprentice, and received Money in part,* September 2.

37 *Brought a total Sum of Charges of Merchandize paid, from the Book of Charges, into the grand Books,* October 7.

30 *Brought a total Sum of Houſe Expences paid and owing, into the grand Books,* October 7.

39 *Gained upon ſome foreign Coin which I have ſold,* July 28.

Proper foreign Trade.

40 *Shipt Goods (which were entred in my Book) with Charges, and Inſurance,* See June 18, July 4, 10. *the Goods not entred,* June 21.

41 *Adviſed that my Factor has received my Goods conſigned to him, but nothing of the diſpoſal,* July 12, Auguſt 10.

42 *Ad-*

42 *Adviſed that my Factor has ſold my Goods (lying in his Hands) for ready Money,* July 22, *on Time,* Auguſt 22.

43 *Adviſed by my Super-Cargo, of his being ſafe at his Port, ſelling my Goods for ready Money, and loading the Value in return,* Auguſt 3.

44 *Adviſed by my Super-Cargo, that he has conſigned my Goods to a Factor, being himſelf ready to ſail homeward,* Auguſt 23.

45 *Adviſed that my Factor has received Goods of mine conſigned to him, (part of the Cargo being loſt at Sea) and ſold part thereof for ready Money,* Auguſt 8, October 12.

46 *Adviſed that my Factor has bought and ſhipped Goods for my Accompt,* Auguſt 10, September 11.

47 *Adviſed of the Loſs of a Cargo at Sea* Auguſt 24.

48 *Adviſed that my Factor has received Payment of Debts owing for Goods of mine ſold by him,* September 10.

49 *Adviſed of the Sale of my Goods formerly received, and the Value remitted, with more alſo for Payment of a former Accompt,* October 16.

50 *Adviſed that my Factor has received my Goods, ſold them, and remitted the Value,* December 25.

51 *Received Goods, formerly adviſed to have been ſhipt by my Factor or Super-Cargo,* September 6. *and part immediately ſold,* September 22.

52 *Received Goods ſent by my Factor, with the firſt Advice concerning them,* Auguſt 20.

53 *Adviſed that one of my Factors has ſhipt off my Goods to another Factor,* September 18.

54 *Adviſed that one of my Factors has drawn on another for my Accompt,* September 25.

55 *Drawn by me on my Factor for my Accompts, the Contents received in Caſh,* Auguſt 5, 16. *in Goods and Money,* September 25, *the Contents owing,* Auguſt 22.

56 *Remitted to me by my Factor, for my Accompt, the Contents inſtantly received* Auguſt 15, *the Bill accepted at Uſance,* Auguſt 30.

57 *Adviſed by my Factor that he has received Money of mine, which was lent on Bottomry,* July 26. *See Caſe* 26.

Factorage, and what relates thereto.

58 *Received Goods to ſell in Commiſſion, and Charges paid at Receipt,* Aug. 16.

59 *Sold the Goods for Caſh,* Auguſt 20. *On Time,* Auguſt 23.

60 *Shipt off the Goods, by Order, and have ſtated my Proviſion and Charges to Accompt,* September 7.

61 *Received Payment of my Imployer's outſtanding Debts,* September 13, *and have cloſed the Accompt of Goods which are all ſold,* September 13. *Rebatement made to the payer,* November 22.

62 *Remitted to my Imployer for his Accompt; the Contents inſtantly paid,* Auguſt 20.

63 *Drawn on me by my Imployer, which I have paid,* September 28.

64 *Bought and ſhipped Goods for my Imployer, with Charges and Proviſion,* September 2.

66 *Bought and received Goods for my Imployer's Accompt, to be ſent away with the firſt Occaſion, Coſt and Provſion ſtated,* September 7, *paid more Charges at ſhipping them,* September 13.

66 *Received Goods ſent to me by my Imployer in return of what he owes me, alſo a Bill for part,* October 5.

Exchange in Partnership.

67 *Drawn by me for our Accompt of Exchange*, September 10.

68 *Remitted to me for our Accompt*, Sept. 7.

69 *Drawn on me for our Accompt*, Sept. 22.

70 *Remitted by me for our Accompt*, Aug. 26.

Company Trade, when my Partner is Manager.

71 *Given Money for my Stock*, Aug. 30.

72 *Allowed the Manager, for my Stock, to take what he owes me*, October 16.

73 *Drawn on me for my Share of Goods bought for the Company*, Sept. 18. *Drawn for more than my Share*, November 4.

74 *Received Goods and Cash in Payment of my Share of Stock and Gain in Partnership*, September 28.

75 *Received from my Partner payment of a former Debt, also more to Accompt of my Concerns*, Dec. 9th.

Company Trade, when I am Manager, and keep the Accompts in my own Books.

76 *Entred into Partnership, and received Goods from my Partner, to which I added of my own*, October 21. *received Goods and Money from my Partner*, October 22. Nov. 20.

78 *Sold Company Wares for Cash*, October 23, *On Time*, October 26, *for Money, and a Debt I owe the Buyer*, October 26, *received a Bill for the Price, on my Partner*, November 5, *my Partner has taken Receipt for his own Share of the Bill*, Novemb. 19.

79 *Bought Goods for the Company, with the Money received from Partners for that Effect*, October 23, *with my own Cash*, October 30, *paid Part with the Companys Cash, and Part owing*, Nov. 2, *the whole owing* Nov. 5, *drawn on my Partner for all* Dec. 16.

80 *Bought Goods for Company, and have shipped them aboard a Ship belonging to the Company; the Partners being unequal in the Ship, but equal in the Cargo; and have laid out Money for my Partner*, December 2.

81 *Shipped the Companys Goods, paying Charges*, November 8.

82 *Paid my Partners for their Accompt in Cash*, November 11, *by Assignation*, December 22.

83 *Paid a Debt owing for the Company, with their own Money*, December 25.

84 *Received Payment of a Debt owing to the Company*, December 9.

85 *One Partner receives from another, his Share of a Debt owing by this Partner, for the Company's Goods*, December 20.

86 *Advised, That our Factor has received our Goods, and sold them for Cash*, November 28.

87 *Drawn on our Factor, and receeived the Contents*, December 24.

88 *Drawn on our Factor for Company Accompt, payable to himself for the Accompt of another, for whom I suppose, I was obliged to remit, with Loss of Exchange*, December 25.

89 *Adjusted Accompts with my Partners, and have paid their Shares*, October 27, December 28.

90 *Examined the State of the Accompts of a Company, and have placed to Accompt several Charges and Provisions owing; also collected the Gain, and made a Dividend thereof, in Order to bring my Books to a Close.*

N. B. You'll find some small Varieties among the Examples in the *Waste Book*, that were not worth making distinct Cases of; and such as were fit to notice here, you have them under the Cases.

APPEN-

CONCLUSION.

HAVING thus closed every Accompt in your *Leger*, the *Accompt of Balance* contains your new Inventary; on the Debtor Side the Articles that compose your gross Estate, and on the Creditor Side your Debts (minding always that what Articles on the Debtor Side are not properly yours, as the Balance of Factorage and Company Accompts, are compensated by equal Articles on the Creditor Side) so that the Difference of the Debt and Credit of Balance is your present free Estate; which being compared with the Difference of the last *Accompt of Stock, viz.* your free Estate at making the last Inventary, you'll see the Encrease or Decrease of your Stock, which ought to be equal to the Balance of the *Accompt of Profit and Loss, i. e.* the neat Gain or Loss; and then you have a very probable Argument, that all Things are right, how it may possibly be otherwise, I have already hinted. But to make a perfect and methodical Close of the whole *Leger*, close the *Accompt of Balance, and of Profit, &c.* with *Stock, i. e.* taking the Difference of the two Sides of these Accompts, set it upon the least, (whereby it is balanced) and make the Accompt Debtor to, or Creditor by *Stock*, and transferring the same to the opposite Side of the *Stock Accompt*, sum up the two Sides thereof, and they will be also equal, if all is right; the Reason of which is plainly this, because as has been already explained, the Method of Debtor and Creditor makes the whole *Leger* run into a Balance, *i. e.* makes the Sum of the Debts equal to the Sum of the Credits, and therefore, every other Accompt being balanced or equal, and the Differences brought to the *Accompts of Balance, and Profit*, &c. when the Differences of these last are taken and carried to the *Stock Accompt*, which is the last that stands open, and all this in the same Form of Debtor and Creditor, that Accompt must necessarly be balanced or equal. But from this Equality of the Stock Accompt, you may argue more immediately for that which is the most sensible Proof, that all your Accompts are just and right, *viz.* your present free Estate being exactly equal to the free Estate you had at making up the last Inventary or *Stock Accompt*, and the neat Gain made since; or less than the last free Estate, by the neat Loss, which is thus demonstrated; Suppose there is Gain, then is it brought to the Creditor Side of *Stock Accompt*, and your present free Estate to the Debtor Side, wherefore upon the Debtor Side of Stock you have the former Debts and present free Estate; upon the Creditor Side you have the former gross Estate, (equal to the former free Estate and Debts) and the neat Gain made since; but the Sums are equal, and if you substract from equal Sums, an equal Part, the Remainders will necessarly be equal; therefore suppose out of each Side of the Accompt of Stock, the former Debts are substracted, the Remainders must be equal, *viz.* upon the Debtor Side, the present free Estate, and upon the Creditor Side the former free Estate, and neat Gain made since. 2. If the Stock is decreased, the neat Loss will come upon the Debtor Side of Stock, which will now contain the former Debts, present free Estate and neat Loss; and

 the

the Creditor Side will have only the former groſs Eſtate, *viz.* the former free Eſtate and Debts; the Debts being therefore ſubſtracted from both, the equal Remainders are, on the Debtor Side, the preſent free Eſtate and neat Loſs, and on the Creditor Side the former free Eſtate; which two ought naturally to be equal. 3. If you ſuppoſe the Stock is reduced to nothing, or leſs than nothing, as if there be more Debts than Effects, yet this Equality will by the ſame Kind of Reaſoning prove the Thing demanded, *viz.* that the former free Eſtate is equal to the neat Loſs, if the Stock is exactly nothing, or if leſs than nothing, that the neat Loſs is exactly equal to the former free Eſtate, and what your Debts exceed your Effects.

Note, If you had carried the Difference of the *Profit*, &c. and *Stock Accompts* into the *Balance Accompt*, then that would be equal, and from that you might infer the ſame Concluſion.

Upon this *Balance Accompt* therefore, begin a new Set of *Books*; the Inventary and *Stock Accompts* whereof, is compoſed of the Articles of that *Balance Accompt*, as already ſaid. But remember that theſe *Balances*, and the Articles of *Profit* and *Loſs*, now calculate, ought to be collected on a ſeparate Paper, (into which tranſport the Articles of the *Accompt of Profit*, &c. that ſtand already in the *Leger*) without touching the *Accompts* in the *Leger*, until you make Trial, and find that all is right.

And now you may pleaſe to reflect upon what I anticipate concerning this *Accompt of Balance* at § IV. *Chap.* II. *viz.* that it is the Metamorphoſis of the former *Accompt of Stock*, ſhewing all the Alterations that have happened to it, and preciſely the State it is in at preſent, both as to the Value and the conſtituent Parts.

I hope you are, by this Time, ſenſible of the Excellency of this regular accompting; you ſee with what beautiful Art a very great Courſe of Affairs, diffuſed thro' manifold Accompts may be diſtinctly recorded, and how they are all now reduced into the narrow Bounds of this one Accompt, in Order to ſhow the preſent State of the Whole.

N. B. A Man may reaſonably propoſe to himſelf to know how the total State of his Affairs ſtands, tho' he think not of tranſportiug the *Accompts* into new *Books*; which Demand he may ſatisfie himſelf of, by making the Balance in the Manner directed, but not touching the *Accompts* in the *Leger*.

Observe, *Some tranſcribe the* Balance Accompt, *and Articles of Gain and Loſs into the* Journal, *and upon the* Accompts *in the* Leger *take them in one Sum, to or by* ſundry Accompts; *but I have filled up theſe Accompts in the* Leger *at large, and not touched the* Journal; *becauſe the* Balance *and* Profit, *&c.* Accompts *are the immediate Reſult of an Enquiry made into the State of Accompts in the* Leger, *whereas the* Journal *is only a Tranſcript of the* Waſte-Book; *but let every one do in this as they pleaſe.*

FINIS.

K. with preface

APPENDIX.

CHAP. I.

Of ARITHMETICK.

§ I. *Rules of Practice.*

WHAT are commonly called the *Rules of Practice*, are nothing elſe than the *Rule of Three* abridged, in this Caſe, *viz.* When the Price of an Unit of any Thing, as 1 Yard, 1 Pound Weight, 1 Ounce, *&c.* is known, and the Value of any other Number of Yards, Pounds, Ounces, *&c.* are ſought. In this Caſe 1 being always the *Diviſor*, the Queſtion is anſwered by Multiplication; all the Variety of theſe Rules, lies in the various Suppoſition of the Price of the Unit, which may contain a ſimple Number of *l. s. d. f.* or a Number mixt of any two or more of them.

Caſe 1. THE firſt and moſt conſiderable Caſe is that, where the Price of an Unit is an aliquot Part of ſome ſuperior Species, as when it is Farthings, which are the aliquot Part of a Penny; Pence, or Pence and Farthings, aliquot of a Shilling; Shillings, or Shillings and Pence, aliquot of a Pound; and the Rule is, divide the Number whoſe Value is ſought by the Denominator of the aliquot Part, the Quote is the Anſwer, in that Species whereof the Price of the Unit is an aliquot Part. *Example*, If 1 Yard coſt 10 *s.* what is the Value of 426 Yards? Becauſe 10 *s.* is $\frac{1}{2}$ of a *l.* therefore divide 426 by 2, the Quote is 213 *l.* for anſwer. If the Price were 5 *s.* divide by 4, becauſe 5 *s.* is $\frac{1}{4}$ of a *l.* Alſo if it were 6 *s.* 8 *d.* which is $\frac{1}{3}$ divide by 3. Again were it 4 *d.* divide by 3, and the Quote is *s.* for 4 *d.* is $\frac{1}{3}$ of a *s.* and ſo of others, according to this Table of aliquot Parts.

s. d.	is 1	*th*	Part of a *l.*
1		20	
1 : 8		12	
2		10	
2 : 6		8	
3 : 4		6	
4		5	
5		4	
6 : 8		3	
10		2	

d. f.	is 1	*th*	Part of 1 *s.*
1		12	
1 : 2		8	
2		6	
3		4	
4		3	
6		2	

1 *Far.* is $\frac{1}{4}$ of a Penny.

THE Practice is very plain, and I ſhall not inſiſt on more *Examples*, leaving that to your own Induſtry, having propoſed only to give you the *Rules*, and the *Rationale* of them: Now for this *Rule* of aliquot Parts, the Reaſon is clear, becauſe if the Unit coſt an Unit (as if 1 Yard coſt 1 *l.*) then any Number of ſuch Units is worth the ſame Number, (ſo 46 Yards at the foreſaid Rate, is worth 46 *l.*) therefore if the Price be but a Part of 1 *l.* the Va-

lue of the other is the same Part of that Number, that is, if 1 Yard cost 4 *s.* or $\frac{1}{5}$ of a *l.* then 56 Yards are worth $\frac{1}{5}$ of 46 *l.* or you may see the Reason by stating the Price fractionally thus, *viz.* 1 Yard ——— $\frac{1}{5}$ *l.* ——— 46 Yards, to work this by the common Rule, you multiply 46 by $\frac{1}{5}$, *i. e.* divide it by 5.

N. B. To make this Rule more universal, take the Case thus, *viz.* when a Question being duly stated and prepared, the Term which falls to be Divisor is 1, and that Term which is like the Thing sought (most commonly the middle Term) is an aliquot Part of some superior Species, then divide the other Term by the Denominator, *&c. Example*, if 48 Men do a Work in 8 Hours, in what Time will 1 Man do it, divide 48 by 6, (because 8 Hours is $\frac{1}{6}$ of a Day) the Answer is 8 Days.

Case 2. If the Price of the Unit is not an aliquot Part, yet it is composed of certain aliquot Parts, by all of whose Denominators separately, if you divide the Number whose Value is sought, and add all the Quotes, their Sum is the Answer. *Example*, if 1 Ounce cost 9 *s.* (which is $\frac{1}{4}$ and $\frac{1}{3}$ of 1 *l.* for it is equal to 5 *s.* and 4 *s.*) then for 40 Ounce take $\frac{1}{4}$ and $\frac{1}{5}$ of 40, *viz.* 10 and 8, the Answer is 18 *l.* and so of others, the Reason of which is contained in the last. For Shillings the following Cases do better, and I would only apply this Rule to Pence and Farthings.

Case 3. If the Price of an Unit is any even Number of Shillings less than 20, it is best to do it thus, *viz.* take half of that Number, and by it multiply the other Number, from the Product take the Units Place, and double it, for Shillings, and the rest for *libs.* which make the Answer. *Example*, if 1 Stone cost 12 *s.* what 54 Stone? multiply 54 by 6, the Product is 324, and the Answer is 32 *l.* 8 *s.* the Reason of this is, that in the common Way to multiply 54 by 12, produces the Answer in *s.* and these divided by 20, gives the *libs.* and the Remainder is *s.* Now to multiply by 6 the half of the Price, gives but the half of the Answer in *s.* 324, and if you multiply this by 2, the Product is 648, the whole *s.* but to bring these again to *libs.* they must be divided by 20, *i. e.* half of 64 for *libs.* and 8 for *s.* (because in the Division the 0 of the 20 coming under the 8, makes it the Remainder of *s.*) therefore it is the same Thing to take the half Number of *s.* and reduce it according to the Rule, for the Units Place is multiplied by 2, and for the other Places, if they are not multiplied by 2, they are not again divided by 2, so that the *libs.* are truly found, since if any Number is multiplied, and the Product divided by the Multiplier, the Quote is the same Number that was multiplied.

EXAMPLE.

1 Yard —— 13 *s.* —— 18 Yard

Multiply by 3, is 54

——— *l.* *s.*

20 | 234 | 11 14

Answer

Case 4. If the Price of an Unit is any odd Number of Shillings less then 20, work for the greatest even Number less than that Number, by the last Case, and for the 1 *s.* odd, and add the two. *Example*, if 1 Yard cost 13 *s.* what 18 Yard? for 12 *s.* the Answer is 10 *l.* 16 *s.* and for 11 *s.* it is 18 *s.* which make 11 *l.* 14 *s.* but this Case you'll as easily do in the common Way, especially with this Compend in the Multiplication,

cation, *viz.* where the Price is any odd Number above 9, as 11, 13, in the multiplying you need only multiply by the Units Place, and set the Product a Place to the right Hand, and so add it to the Thing multiplied; the Reason of which is plain enough, it being the same Thing whether 48, the Product made by the 1 of 13, stand above or below the other, as in the *Example* annext.

Case 5. If the Price of the Unit is composed of *l. s. d. f.* you must work for each separately, and add all together. First multiply by the *libs.* the Product is *libs.* then work with the *s. d. f.* separately, unless the *s.* and *d.* make an aliquot Part of 1 *l.* then work with them at once.

Case 6. If the Number whose Value is sought, is mixt, then if the inferior Species, are aliquot Parts of the Unit, work for the Value of the whole Number; and for such aliquot Parts, take the like Part of the Price of the Unit, and add all together. *Example*, if 1 Yard cost 5 *s.* what 16 Yards, 2 Quarters, for 16 Yards I find 4 *l.* and for 2 Quarters I take ¼ of 5 *s. viz.* 2 *s.* 6 *d.* and the whole Answer is 4 *l.* 2 *s.* 6 *d.*

Now for these *Rules of Practice* use them as you find they will be convenient, but you'll very soon observe, that the common general Rule, to a ready Hand, will prove as short and easy in very many Cases, especially in *Case* 5.

There are *other Contractions* you may make in many Cases, where none of the Terms is 1, which I shall deliver in one general Rule, *viz.* your Question being duly stated and prepared, if you can readily discover a Number, that will exactly divide the Extreme which should be the Divisor, and any one of the other two Terms, substitute these Quotes in the Places of the former, and work with them; by this you'll have the Multiplier or Divisor, or both, reduced to lesser Numbers, whereby the Work will be easier; and sometimes one of these Terms will reduce to an Unit, so that the Question will be answered by *Multiplication* or *Division* only; and where the Extreme that should be the Divisor is reduced to 1, then you may bring in the preceeding Rules of Practice.

Example 1. If 7 Yards cost 56 *l.* what cost 35 Yards, it is easy to perceive that 7 and 35 will both divide by 7, and be reduced to 1 and 5, so that the Answer is found by multiplying 56 by 5, answer 280 *l.*

Example 2. if 250 *l.* buy 548 Yards, what will 5 *l.* buy; they reduce to this 50 ——— 548 ——— 1, and is answered by dividing 548 by 50.

Example 3. 27 Ounce ——— 45 *l.* ——— 63 Ounces, reduces to 3 ——— 45 ——— 7, this may again be reduced, because 3 and 45 are in Proportion to 1 and 15, so it stands 1 ——— 15 ——— 7, the Answer is 7 Times 15, or 105 *l.*

You may very oft discover the new Numbers that make this Abridgement at sight, or with a very little Consideration.

The Reason of this Rule is, That the two Numbers which I direct to be reduced, contain betwixt them the true *Ratio*, according to which the Thing sought is to be made greater or lesser than the other Term not reduced, and therefore a Fourth in Proportion to that as the two new Numbers are to one another, is the same as a Fourth in Proportion as the Numbers reduced; since these being divided by one Number, are in the same *Ratio* with their Quotes, as has been already demonstrated: So in the first *Example* it is proposed to

find a Number of *libs.* exceeding 56 in the *Ratio* of 35 to 7, which is alſo the *Ratio* of 5 to 1. In *Example* 3d, we are to find a Number of *libs.* exceeding 45, as 63 to 27, which are as 7 to 3; but when the Queſtion ſtands ſo, *viz.* 3——45——7, we may now ſay, we are to find a Number exceeding 7, as 45 to 3, *i. e.* as 15 to 1, becauſe the Fourth ſought 105 is proportional with the other three Numbers, whether they ſtand 3——45——7——105, or 3——7——5——105, by what has been already demonſtrated, and is plain of it ſelf, ſince in both Caſes it is 45 and 7, that muſt be multiplied, and the Product divided by 3, to find a Fourth direct proportional; and when the Fourth is indirect, it is but reverſing the Terms to make it direct.

FROM the ſame Principle it follows, That if the Diviſor, and any other of the Terms are Fractions, or one of them a Fraction, and the other a whole Number, if theſe two Terms are reduced to Fractions having a common Denominator, you may neglect the Denominator, and find the Fourth ſought by Means of the Numerators, becauſe Fractions having a common Denominator, are in Proportion as their Numerators. *Example*, ¾ Yards ——16 *l.*——½, you may proceed with theſe, 3——16 *l.*——5. alſo, if 4½ Ounce coſt 28 *l.* what coſt 18 Stone, or 4608 Ounces; the firſt Term reduced is ½ Ounce, and you may either turn 28, or 4608 into the Form of a Fraction, whoſe Denominator is 5, and then work with the Numerators; ſo it will be either 23——140——4608, or 23——28——23040, the Anſwer is the ſame in both, *viz.* 2804815/23 *l.* In many Caſes this may be uſeful.

§ II. *Of the Rule of Fellowſhip.*

IN theſe Queſtions where the particular Stocks continue unequal Times in the common Stock, the Rule is to multiply each Stock by the Time of its Continuance, and Proportion the Shares of Gain and Loſs, according to theſe Products: But there is one Thing ſuppoſed in this *Rule*, which ought to be noticed, *viz.* That it is agreed among the Partners that at whatever Time they ballance their Accompts to find the neat Gain or Loſs, the ſame is to be divided among them ſo, that their Shares ſhall have ſuch Proportion between themſelves as thoſe Sums of Intereſt have to one another, which at any Rate *per Cent.* might be gained by the particular Stocks, in the Time of their continuance in the common Stock.

NOW, From this Suppoſition upon which the Rule does entirely depend, the Reaſon of it will be very plain, which I ſhall deduce thus, Suppoſe 100 in one Year give 6 *l.* (or any Rate) of Intereſt, and let any particular Stock be 16 *l.* which continued 3 Months, to find 3 Months Intereſt of 16 *l.* by the Rule of 5, the Terms ſtand thus, 100 *l.*—12 Months—6 *l.*—16 *l.*—3 Months, and to do it by one Operation, as I have taught, we are to Multiply 100 and 12 for the Diviſor, and 6, 16, and 3 for the Dividend, that

is,

is, it becomes a Queſtion of the Rule of Three, whereof the firſt Term is 100 multiplyed 13, or 1300, the middle Term is 6, and the third Term is 16 into 3, *i. e.* the Product of that particular Stock by the Time of its continuance, and if we ſuppoſe the ſame Operation for every particular Stock and Time, then in each, the two firſt Terms being the ſame, *viz.* 1300 and 6, the 3*d* and 4*th* of each will be in the ſame *Ratio*, *i. e.* will be proportional, that is, every particular Stock multiplyed by its Time, is to its Intereſt as any other ſuch Product to its Intereſt, and ſince the Suppoſition is, that the Shares of Gain or Loſs muſt be as theſe Intereſts, therefore they are alſo as theſe Products, according to the Rule.

To this I add one Example more, ſuppoſe *A.* and *B.* join in Partnerſhip thus, *A.* put in 40 *l.* and at 4 Months end took out 10 *l.* [ſo he had in but 30 *l.*] and at 2 Months thereafter put in 30 *l.* [ſo he had in 60 *l.*] *B.* put in 50 *l.* at 3 Months put in 20 *l.* [ſo he had in 70] they ballance Accompts at 8 Months end, and find 18 *l.* Gain. To know each Man's Share, for this and all other Caſes of this Kind, agreeable to the former Suppoſition, we muſt conſider how long each of theſe varying Stocks [which Stocks we alſo find by adding or ſubſtracting as they take out or put in] continued in Company, and multiply each by its Time, add all theſe Products, and according to that Sum muſt the Gain or Loſs be proportioned, as is plain from the foreſaid Reaſoning. *See the Operation of this Example.*

A. had	40 *l.*	30 *l.*	60 *l.*	*B.* had 50 *l.*	70 *l.*
for	4 Months	2 Mo.	2	3 Mon.	5 Mon.
To	160 add	60 and	120 the	To 150 add	350 the
total is	340 by which *A*'s Share			total is 500.	
is found	500 by which *B*'s, *&c.*				

Proportion, As 840 to 18, ſo is 340 to *A*'s Share
500 to *B*'s Share } work and find them, I have only to tell you, that the 2 Months under 60, in *A*'s and 5 under 70 in *B*'s, are the Months that the Sum of the preceeding Time wants of 8 Months, which the Company exiſted, and therefore is the Time belonging to that 20 and 50.

§ III. *Of Intereſt.*

I. THE whole Buſineſs about Intereſt, depends upon this Suppoſition, that there is a certain Rate ſtated by Law, or Agreement of Parties, which allows ſo much as 6 *l.* to be given for the Uſe of another greater Sum, as 100 *l.* in a certain Time as one Year, and for this Time the Intereſt of every other Principal is directly proportional, *i. e.* Half, for a Half, *&c.* the Intereſt for one Year, therefore is not properly called either Simple or Compound, for it is a ſtated Allowance. If the Principal ly out longer,

longer, then for every Year there is due upon the Principal, as much Intereſt as for the firſt Year, and this is called *the ſimple Intereſt*, or *Intereſt of the Principal*, but if this Intereſt is not punctually paid at the Years end, and together with the Principal, bears Intereſt for the next Year, and thus accumulating at every Years end the preceeding Intereſts into a principal Sum bearing Intereſt for the next Year, this is called *compound Intereſt*, or *Intereſt upon Intereſt*. There are two neceſſary Obſervations to be made here, *1ſt*, That the Intereſt upon the Principal not being punctually paid at every Year, the Lender is a Loſer, unleſs he be allowed *compound Intereſt*, which is very reaſonable; for if at every Year his *ſimple Intereſt* is as really due as the Principal, he ought in ſtrict Equity to have Intereſt for it while it is unpaid after the Term; if he receive it punctually, and lend it to another, he receives Intereſt very juſtly, and why not from the Perſon who has his Principal Sum? There is no Reaſon but the Law againſt it, the Ground of which we have nothing to do with in this Place. *2d*, If any principal Sum lyes out leſs than one Year, or whole Years and ſome odd Part of a Year, the Queſtion is, how the Intereſt for that Part ought to be calculate? Common Cuſtom does it in direct Proportion of 100 to 6 *l.* (or other Rate) for one Year. So that in half a Year 100 gives 3 *l.* in a Quarter 30 *l.* and ſo of the other principal Sums and Times, according to the Rule of 3. But if we enquire into the ſtrict Equity of this, it is juſt or falſe in different Senſes: The Law ordains ſo much *per Cent. per Annum*, but ſpeakes nothing of the Parts of a Year; there is no more than 6 *l.* due for the Uſe of 100 *l.* in one Year, but if the Principal ly not out a whole Year, what ought to be received? You can take no more than 6 *l.* for one Year, yet certainly there is ſomething due for a leſs Time: If the meaning of the Law be to allow a proportional Part, there is no more Queſtion; but if it mean that the whole Improvement a Man can make of 100 *l.* by Intereſt, muſt not exceed 6 *l.* then, the Intereſt due for a leſſer Time than one Year, muſt not be in ſimple direct Proportion, for if 3 *l.* be paid for half a Years Intereſt of 100 *l.* (and ſo of other Times and Principals proportionally) and the whole 103 *l.* laid out at Intereſt for another half Year at the ſame Rate, it will exceed the Rate of 6 *l.* for one Year; or take it in this View, if the Borrower pay Intereſt in half Years Payments, 3 *l.* for the firſt half Year, and 3 *l.* for the other, it is plain he loſes half a Years Intereſt of 3 *l.* which he pays at the firſt half Years end. At firſt hearing, you'd think it a juſt Rule to find the proportional Intereſt for the Time propoſed by the common Rule, and then find the preſent Worth thereof, rebating at the given Rate *per Cent. per Annum*, for ſo much Time as the given Time wants of one Year; which preſent Worth you'll ſay is the Anſwer, becauſe, according to the Rule of Rebate at *ſimple Intereſt*, if it is laid out on Intereſt for that remaining Time, it will at the end thereof, amount to the Thing which is payable by the common Rule. But the Objection is plain, for it will not amount to that, but upon the very Suppoſition, which is here quarreled, *viz.* That the Intereſt thereof for that Time, is in direct Proportion of 6 *l.* (or other Rate) to 100 *l.* for one Year. Therefore you

you may take notice, that the Rule for rebating *simple Interest* for any Time less than one Year, is founded upon the common Rule of proportioning the Interest to the Time less than one Year, which according to the Meaning now put upon the Statute is wrong. Therefore to answer this Meaning of the Law, a Man ought to receive no more Interest for any Part of a Year than what accumulate with his principal Sum, and laid out at the same Rate for as much Time, and an Accumulation thus made for every as much Time, the Amount shall be no more at a Years end than 106 *l.* For *Example*, If 100 give 6 *l.* in one Year, if it's paid quarterly, suppose the true Interest for the first Quarter is 1. 46, *&c.* and it is such, that if 100. 46 *&c.* be put forth for another Quarter at the same Rate (*viz.* of 101. 46 *&c.* amount for 100 in one Quarter); and then an Accumulation be made at the second Quarter, and so on for the *3d.* and *4th.* Quarter, the Amount for this last shall be exactly 106 *l.* But more of this below.

II. *OF SIMPLE INTEREST*, I have nothing else to add, the Rules of *Chap.* II. in the preceding Treatise, contain all the Questions: And as to the Rule for finding Interest for the Parts of one Year to answer the Remarks just now made. I shall speak of them under the next Head, *viz.*

III. *OF COMPOUND INTERETT*, The Rules aleady delivered being Tedious, I considered it would be very acceptable to abridge them, if I could also explain the Reason of the new Rules, (because I propose to do nothing without this) and call in no other Principles than what are already laid down, in the preceeding Parts; which I hope now to perform, and also add some other necessary Things.

Question 1, and 2. The *Time* and *Rate* of Interest is given in both Cases. Also the *principal Sum* to find the *Amount* in one Case; and the *Amount* or *Sum* due at the End of the proposed Time, to find the *Principal* or *present Worth* in the other Rule. 1. Find the *Amount* of 1 *l.* at the Rate, and for the Time proposed; and in this Work you'll have nothing to do but multiply, after having found the first Years *Amount*; for by the Nature of *compound Interest*, as 1 *l.* to the first Years *Amount*, so is that to the second Years *Amount*, and so is every Years *Amount* to the next; where you see 1 is always the *Divisor*, and the first Years *Amount* the continual Multiplier. Then *2d*, Say by the *Rule of Three* as 1 *l.* to its *Amount*, so is the given *Principal* to a *4th* Term, which is the *Amount* sought: And as the *Amount* of 1 *l.* is to 1 *l.* so is the given *Amount* or *Sum* due, to the *Principal* or *present Worth* sought. The Reason of this Proportion is, because all principal Sums are proportional with their Improvements made in the same time, and at the same Rate; for every lesser principal Sum may be conceived as a Part of the greater, and every Part of the Principal must necessarily poduce a like or proportional Part of the Improvement, *i. e.* the half an half, and the third, a third, *&c.* *Example*, What is the Amount of 200 *l.* Principal for four Years, *compound Interest*, at 6 *l. per Cent. per Annum*. Answer 25. 2495392 *l.* which I find thus, 1 *l.* in four Years, amounts to 1. 26247696, then as 1 — to 1. 6247696 — so — 20 — to 25. 2495392. And if this were a Sum due at four Years end, you would find the *present Worth* of it to be 16 *l.* by the reverse Proportion.

Now,

Now, hitherto there has appeared nothing of *Compend* in this Rule, becauſe you'll ſay its as eaſie to find the Amount of the given Principal, as of 1 *l.* But take this eaſy Way for finding the Amount of 1 *l.* and then you hav a compendious Rule, *viz.* Having found the Amount of 1 *l.* for 1, 2 and 3 Years, you may find the Amount for a very great number of Years with much Eaſe, thus, If you multiply the Amount of two Years by its ſelf, the Product is the Amount of four Years, and the Amount of four Years by its ſelf, produces the Amount of eight Years; the Amount of three Years by its ſelf, gives that of ſix Years; 3 Years multiplied by that of 4 Years, gives that of 7 Years. And *in general*, the Amount of any Number of Years multiplyed by the Amount of any Number, gives the Amount of a number of Years equal to the Sum of the Years whoſe Amounts are multiplied according to the former *Example*. Therefore having raiſed the Amount of 1, 2, 3 Years, you may find the Amount of any other Number with much more Eaſe than by raiſing all the intermediate ones.

The Reaſon of this Rule, By the Nature of compound Proportion, 1 *l.* (or any Principal) with its Amount, for 1, 2, 3, *&c.* Years are a Rank of Numbers in continual *Geometrical Proportion*; for as any Principal is to its Amount for one Year, ſo is this Amount taken as a Principal to its Amount for one Year, (*i. e.* the Amount of the firſt Principal for two Years, and ſo on.) The Principal, or 1 *l.* is one Extreme, and take any Years Amount for another Extreme; then to take two mean Terms at equal Diſtance from theſe Extremes, they will be the Amounts belonging to theſe two Numbers of Years, whoſe Sum is equal to the Number of Years of the Amount that is the Extremes; as if you take the Amounts of eleven Years, the two mean Terms are the Amount which belongs to 4 and 7, or 5 and 6, or 2 and 9, or 3 and 8, or 1 and 10 Years; and if the Number of Years to which the greateſt Extreme belongs is an even Number, as 8, then the number of Terms are odd, and that is the middle Term, which is the Amount of a Number of Years, whoſe Double makes the Number of the Extreme; as here, the Amount of four Years. You may ſee all this very ſenſibly, by ſetting down the Rank thus, 1 : 1 *&c.* 1 : 1 *&c.* 2 : 1 *&c.* 3. 1 *&c.* 4. —— where I expreſs every Years Amount by 1 *&c.* and the Number of the Year annext. But by Propoſition *6th. Of Geometrical Proportion*, in *Chap.* VI. of the preceeding Treatiſe, the Product of the Extremes, and any two equally diſtant, and the Square of the *Middle Term* are equal, *i. e.* theſe Terms are proportional; therefore the Product of the two mean Terms, or the Square of the middle divided by the firſt, Quotes the greateſt Extreme (by *Conſequence* to *Proportion* 3d, in the forecited place.) But in the Caſe of 1 *l.* Principal, the Diviſor is 1, and therefore the Product is the Thing ſought according to the Rule, which is therefore good.

Observe, We may take the given Principal, and having found one Years Amount (which is always *ſimple Intereſt*) make uſe of theſe two Terms to raiſe all the reſt, by the ſame Method of Abreviation; but the Difference is, that

that the Diviſions to be performed will be tedious, whereas in finding the Amount of 1 *l.* there is no Diviſion, the Diviſor being 1.

OBSERVE, The preceeding Rules conſider only Intereſt for whole Years, or ſuch Time for which the Rate of Intereſt is ſtated, ſo if it were agreed that ſo much ought to be paid for every Quarter, as 1. 5 *l.* for 100 *l.* then ſo much *ſimple Intereſt* is due for every Quarter, and *compound Intereſt* quarterly, and the Numbers 100— 101. 5 are to be uſed the ſame Way for quarterly Intereſt, as 100— 106 are for yearly, and ſo of any other ſtated Time. But when we demand the Intereſt due for any Part of that ſtated Time, the Anſwer muſt be found according to the Senſe in which we take the Law, or Agreement that ſtates the Rate of Intereſt, of which I have ſpoken a little above.

LET one Year be the ſtated Time, as it is by Law; if for the Intereſt ſought we take Parts of one Years Intereſt, in direct Proportion to theſe Parts of a Year for which Intereſt is ſought, then we have Rules ready: For by the *Rule of Five*, as 100 in one Year is to 6 *l.* (or other Rate,) ſo is any given *Principal*, in a given *Time*, to its *Intereſt* for that Time. Thus you have the *ſimple Intereſt* for any Time. And for *compound Intereſt*, it depends upon the Term of Payment of the *ſimple Intereſt*; ſo that a known and determined Rate of *ſimple Intereſt* being payable yearly, quarterly, *&c.* the *compound Intereſt* is calculate for that Time by the preceeding Rules. But when the meaning of the Law is, That no Man can make more of 100 *l.* by Intereſt than 6 *l.* in one Year; then, as I have already explained, the Intereſt for any leſſer Time muſt be found another Way, for it muſt be ſuch as accumulate with the Principal, and laid out at the ſame Rate for as much Time, and ſo on, ſhall at the Years end amount to no more than 106 *l.* It is plain therefore, that the Principal, with theſe ſeveral Amounts for ſuch Parts (being all equal Parts) of a Year, make a Rank of *Geometrical Proportionals*, whoſe Extremes are 100 and 106, the firſt mean Term is the Amount for the Time ſought, the ſecond Term is the Amount for double that Time, and ſo on; and in this Caſe there will be as many mean Terms as the number of Times, (leſs by one) which the ſtated Time, as one Year, contains the given leſſer Time: but if the given Time is not an aliquot Part of a Year, you muſt conceive a Rank of Proportionals containing 366 Terms, whereof the Extremes are 100 and 106; ſo that the number of Means is 364; and it is plain, they will be the Amount of 100 for Days, *viz.* The firſt Mean is the Amount for one Day, the ſecond for two Days, *&c.* conſequently to find the Intereſt or Amount for any Time leſs than one Year, we muſt know how to find the firſt of 364 mean Proportionals betwixt 100 and 106 (or other Rate) if the given Time is not an aliquot Part of a Year, and then raiſe the reſt of the Terms till we come to the Days ſought. But if it is an aliquot Part, then find the firſt of as many Means leſs by one, as the Denominator of this Part expreſſes, ſo for a quarter of a Year, the firſt of three Means is the Anſwer, the ſecond is half a Year (tho' this will be had eaſier by finding one ſingle Mean,) the third is the Amount for three Quarters.

Now all the Difficulty lies in finding the firſt mean Term, and indeed it is ſo difficult that I muſt be content with having opened the Nature of the Thing ſo far, becauſe the Rule depends upon ſuperiour Principles, and cannot be explained without *Algebra*. And beſides, Cuſtom has carried it for the common Rule, the Difference being of no great Value in any Caſe that occurs ordinarily. But following the true Method now hinted, *Obſerve*, if the given Time is whole Years and a Part, you muſt firſt work for the whole Years; and then for finding the odd Part, the Extremes of the Ranks of Proportionals are the Amount for the whole Years, and one Years Amount of this at *ſimple Intereſt*: But if the Queſtion has no more in it than a Part of a Year, the Extremes are the Principal given, and its Amount for one Year at *ſimple Intereſt*. To avoid Fractions, I chuſe this for Example, ſuppoſe 3 *l.* in a certain ſtated Time ought to amount to 27, what is the Amount thereof for half that Time? *Anſwer*, 9, for as 3 to 9, ſo is 9 to 27, ſo that being lifted at the half of the ſtated Time, the Amount is 9 *l.* which being laid out at Intereſt, will in as much time yield 27, for as 3 to 27 (which is ſuppoſed the ſtated ſimple Rate) ſo is 9 to 81; ſo this 9 in the ſtated Time, amounts to 81 at the ſtated Rate, and being lifted up at the end of half that Time, will by the ſame Rule give 27, for 9:27:81 are continually proportional. You may obſerve laſtly, That the Intereſt found by this Method for any Part of the ſtated Time, is properly of the Nature of *Compound Intereſt*, for it is the Intereſt of the Principal and of all the Intereſts which you can conceive for the Parts of the given Time: For Example, The Amount of half a Year is equal to the laſt and greateſt Term of a Rank of Proportionals, containing as many Terms as you pleaſe to conceive betwixt the Principal and the half Years Amount, but theſe Terms are the Amount of Principal and Intereſt, and conſequently give *compound Intereſt*. But if you ask what is the firſt *ſimple Intereſt*, which is thus accumulate? I Anſwer, That it runs to an infinite Series, for if you find the firſt of any Number of *geometrical Means*, by the Nature of the Thing, that may again be conceived as the greateſt Term of any other Number of Means put betwixt that and the Principal.

Quest. 3d and 4th, There remain other two *Queſtions* upon this Subject, *viz.* 1. Having the *principal*, *Amount*, and *Time*, to find the Rate? But this is leſs uſeful, and the Rule not to be underſtood without *Algebra*. The 2. Having the *Principal*, *Amount* and *Rate*, to find in what *Time* that Principal will make that Amount, at the given Rate, allowing compound Intereſt. We have already ſeen, that any Principal, with the ſeveral Years Amounts at compound Intereſt, make a Rank of continual Geometrical Proportionals, and having the firſt two Terms, all the reſt are raiſed by multiplying the ſecond, and every ſucceſſive Term by the *Ratio* of the firſt and ſecond, which in this Caſe is the Amount of 1 *l.* for 1 Year; for as any Principal (which is the firſt Term of the Rank) to its Amount for 1 Year (which is the ſecond Term of the Rank) ſo is 1 *l.* to its Amount. It is plain therefore, that if the given Principal is multiplied by the Amount of 1 *l.* for 1 Year (which is known by the given Rate *per Cent.*) this Product is the Amount for 1 Year, which again multiplied

multiplied by the ſame *Ratio*, produces the Amount for 2 Years, and ſo on. Conſequently if you continue the Multiplication, till the Product become equal to the given *Amount*, the Number of Multiplications are the Number of whole Years ſought. *Example*, in what Time will 46 *l.* Principal amount to 58.07394016 *l.* at the Rate of 6 *per Cent. per Annum*, allowing compound Intereſt; the Amount of 1 *l.* for 1 Year is 1.06, which is the continual Multiplier, and after 4 Multiplications, the Product is the given Amount, therefore the Time ſought is 4 Years: But if you find none of theſe Products exactly equal to the given Amount, then having come the Length of the firſt Product greater, go no further; the Number of Multiplications which produced the next below, is the whole Years ſought; for it is plain, were that next Product the given Amount theſe number of Years were the whole Anſwer, but becauſe the given Amount is greater than this Product, yet leſſer than the next Term, which is 2 Years Amount of the laſt, therefore it's plain, there is ſome odd Part of a Year, which we muſt find thus, *viz.* Find the firſt of 364 *geometrical Means* betwixt the ſaid two Terms (which are one next leſſer, and the other next greater than the given Amount) and make up the reſt by Multiplication, until you have a Term equal to, or next greater than that given Amount, it is plain, the firſt of theſe Means is the Amount, for one Day, of the leaſt Extreme (*viz.* That Amount which terminates the whole Years,) and therefore numbering to the ſaid mean Term, which is equal to, or next leſſer than the given Amount, you have the Number of Days. If you had not a mean Term exactly equal to the given Amount, then is there ſome odd Hours, therefore betwixt the Term next leſs, and next greater (of theſe laſt which determine the Days) put in 23 *geometrical Means*, and you'll find the Hours. And if you find not here a Term equal to the given Amount, you may the ſame Way find the Minutes, by putting in 59 Means betwixt theſe two Terms that are next leſſer and greater, and ſo on to Seconds, Thirds, *&c.* of Time. Or, having found the whole Years, you may determine the odd Time to Quarters or Months and Weeks, by putting in a Number of Terms, anſwerable to theſe Parts of the Year, as has been explained in the preceeding Obſervation concerning the Calculation of *Compound Intereſt* for the Parts of a Year. But again, if the firſt Product in finding the whole Years, exceeds the given Amount, then is the Time leſs than one Year, and you muſt find the Days as directed. If the firſt Mean for finding the Days, exceeds the firſt *Amount*, then it is leſs than one Day, and ſo find the Hours and Minutes, *&c.* But when I have ſaid all this, I muſt leave you without the Rule for finding theſe *Geometrical Means* for the Reaſons above-mentioned. The only help I can offer now is, to bid you be content to find the Parts of a Year by *ſimple Intereſt*, you will come near enough the Truth for any ordinary Caſe, and you may do it thus, Take the Term or Product (of theſe which are raiſed for finding the whole Years) next leſſer than the given Amount, which ſubſtract from the ſaid Amount, and taking that Difference for *ſimple Intereſt*, find by the *Rule of Five* in what Time that leſſer Term will yield that Difference or Intereſt at the Rate of 6 *per Cent. per Annum* (or any other Rate,) and this you may take for the odd Time

ſought; only remark that it will neceſſarly be a little leſs than the true and juſt Anſwer, becauſe *ſimple Intereſt* calculate for the Parts of a Year, by the *Rule of Five*, is always greater than exact Juſtice, (as has been already demonſtrated) therefore the true Time anſwering to any Intereſt leſs than a Years Intereſt, is always greater than that which anſwers to it by the Rule of *ſimple Intereſt*. For Example, if 4 *l.* is five Months Intereſt of any Principal by the common Rule of *ſimple Intereſt*, and 3.96 *l.* the true Intereſt thereof, it is plain that the true Time anſwering to 4 *l.* is greater than five Months, which it the true Time for 3.96, you have therefore a Rule whereby the odd Time ſought is limitted that it can be no leſs.

Note, BECAUSE, as the given Principal to its Amount, ſo is 1 *l.* to its Amount for the ſame Time and at the ſame Rate, therefore if the given Amount is divided by the given Principal, the Quote is the Amount of 1 *l.* for the ſame Time, *viz.* the Time ſought; therefore it will be the ſame Thing to multiply 1 *l.* and every ſucceſſive Product, by the Amount of 1 *l.* for 1 Year, until the Product is equal to the foreſaid Quote or Amount of 1 *l.* for the Time ſought, you'll find hereby the whole Years as before; and for the Parts of a Year, apply the former Rules the ſame Way to this Quote or Amount of 1 *l.* as to the given Amount: You'll find this eaſier Work in every *Caſe* where the given Principal is not 1, becauſe one of the Numbers to be multiplied will always be leſs.

§ IV. *Concerning Annuities.*

BY *Annuities* is meant a Sum of Money which is payable yearly; and if every Years Annuity bears Intereſt after the Term at which it becomes due, then ſuppoſe it be unpaid, or be in arrear for any Number of Years, the ſeveral Years Rent with the Intereſt of each from the Time it became due added together, is called the *Amount* thereof for that Time. Again, *the preſent Worth* of the *Annuity*, or yearly Rent, is that Sum of ready Money, which ought to be given for the Purchaſe or Poſſeſſion thereof for any Number of Years, allowing the Seller and Purchaſer equal Intereſt. I ſhall give Rules for all the Queſtions which are of real Uſe, and which my Method allows me here to give a Reaſon for. And to do this diſtinctly, they muſt be diſtinguiſhed as the Intereſt is *Simple* or *Compound*.

Annuities at ſimple Intereſt.

QUEST. 1. Given the *Annuity*, *Time* and *Rate of Intereſt* to find the *Amount*, allowing ſimple Intereſt. *Rule*, Take the natural Series of Numbers from 1, 2, *&c.* to that which is next leſs than the given Number of *Years*; having ſummed up the Series, [which you can do very briefly by *Conſequence* to *Proportion* 3d of *Arithmetical Proportion*, *Chapter* VI.] find the *Intereſt* of the given *Annuity*, at the propoſed Rate, for a Number of *Years* equal to the foreſaid

Sum

Sum, and to that add the whole *Annuity* due, *i. e.* the Product of a *Year's Annuity* multiplied by the given Number of *Years*, the Sum is the *Amount*. *Example*, What is the Amount of 48 *l.* payable yearly, if it is in Arrear for 7 *Years*, allowing *ſimple Intereſt* at 6 *per Cent* ? the Sum of an *Arithmetick Progreſſion* from 1, 2, *&c.* to 6 is 21, and 21 *Years Intereſt* of 48 *l.* at 6 *per Cent.* is 60. 48 *l.* the 7 *Years Amount* is 336 *l.* the Sum or Amount therefore is 396. 48 *l.*

The Reaſon of the Rule. It is plain there is due the Intereſt of the firſt *Years Annuity* for the given Number of *Years* leſs one; and of the ſecond *Years Annuity*, for 1 *Year* leſs than the firſt, and of the third, for 1 *Year* leſs than the ſecond, and ſo on, diminiſhing by one to the laſt which owes no Intereſt, all which make the Series ſpoken of. There is no more Difficulty in the *Rule*, which I therefore conclude is right.

Quest. 2. Given the *Amount*, *Rate* and *Time*, to find the *preſent Worth*, allowing *ſimple Intereſt*. There are two Ways of doing this: Firſt *Rule*, find the *Amount* by the laſt *Queſtion*, and then find the preſent Worth of that Sum, that is, find a principal Sum, which lent out at *ſimple Intereſt per Annum* from the Date, ſhall in the given Time, and at the given Rate, amount to the ſaid Sum, [by *Queſtion* 1ſt, in *Page* 17th of the preceeding *Treatiſe*.] *Example*, find the preſent Worth of the *Annuity* in the laſt *Queſtion*; the Amount of it is 396.48 *l.* and the preſent Worth of this is 279.211267, *&c. l.* for 7 *Years Intereſt* of 100 *l.* is 42, and as 142 to 100,——ſo is 396.48 to 279.211, *&c.*

But there is another *Rule*, *viz.* find the preſent Worth of every *Year's Annuity*, *i. e.* of the given *Annuity* due at the firſt *Year's* End, at two *Years*, at three, *&c.* by ſo many diſtinct Operations, then add all theſe preſent Worths into one Sum it is the Thing demanded. Theſe two Rules are not only different in the Expreſſion, but in the Conſequence; I ſhall ſhew the Difference, and demonſtrate that neither of them does exact Juſtice to the Purchaſer of an *Annuity*.

The true Deſign of this *Queſtion*, is what I ſaid already, *viz.* to find what Sum of Money preſently paid is equal to an *Annuity* (the firſt *Year* of which commences immediately) forborn ſo many *Years*, allowing *ſimple Intereſt* to each Party, that is, *A* has an *Annuity* of 48 *l.* which *B* would purchaſe for 7 *Years*, and pay him the preſent Value; they agree to give mutual Allowance of *ſimple Intereſt*, *A* allows *B* to calculate *ſimple Intereſt* for his Money from the Date to the End of the *Annuity*, and *B* allows *A* to reckon *ſimple Intereſt* for every *Years Annuity* from the Time 'tis due to the End of the Leaſe: Upon this Suppoſition it is plain, *B* muſt give *A* ſuch a Sum, whoſe Amount will at the End of the *Year's*, *ſimple Intereſt* allowed, be equal to the Amount of the *Annuity*: The firſt Rule ſolves the Queſtion exactly upon this Suppoſition; and you'll think at firſt Hearing, it is very equal for both Parties; becauſe, ſay you, if *A* borrow 279. 211267, *&c. l.* from *B*, he will at 7 *Years* End, *ſimple Intereſt* allowed at 6 *per Cent.* be in his Debt 396. 48 *l.* Again, ſuppoſe abſtractly from this, that *B* poſſeſſes an *Annuity* of *A*'s of 48 *l.* for 7 *Years* paying, at the ſame Rate, *ſimple Intereſt* for each *Year's* Rent after it is due, he will at the End of that 7 *Years*, be in *A*'s Debt 396. 48, whence you conclude the Equity of the Agreement: Indeed if *A* borrow that Money from *C*, and owing *B* nothing, leaves

that

that *Annuity* in his Poſſeſſion, it is plain he will have as much to receive from him at the 7 *Years* End as will ſatisfie *C*'s Demand; but when *A* receives that Money from *B* who poſſeſſes his *Annuity*, the Caſe is much altered as to the ſtrict Equity of the Thing, and *B* is the Loſer; for at the firſt *Year*'s End, *A* owes *B* the Principal and one *Year*'s Intereſt, at the ſame Time *B* owes *A* one *Year's Annuity*, which in exact Juſtice ſhould this Moment compenſate and be deduced from *A*'s Debt; it will therefore pay the *Year's Intereſt*, and Part of the Principal (for neceſſarly the *Annuity* muſt be greater than a *Year's Intereſt* of the Money, elſe *B* would never be paid) and for the Remainder we calculate another *Year's Intereſt*, and from the Sum deduct the next *Year's Annuity*, and ſo on, which is the very Equity of the Caſe: But if theſe Deductions are not made yearly, there ought to be an Allowance of equal *Intereſt* to both for thoſe Sums which mutually compenſate other; which is not in this Caſe, for *A* is allowed *Intereſt* of the firſt *Year*'s whole *Annuity* due by *B*, whereas *B* is not allowed *Intereſt* for the whole Equivalent in *A*'s Hands, which at this Time pays off his *Year's Annuity*; he is only allowed *Intereſt* for the Principal, and not for the *Intereſt* which pays ſo much of the *Annuity* due by him at this Time, therefore *B* is a Loſer.

If you take the Anſwer by the ſecond *Rule*, the preſent Worth or Principal is the Sum of the preſent Worths of the ſeveral *Years Annuities*; yet *B* will ſtill be a Loſer, ſpeaking of the ſtrict Equity of Things. To make this appear, we muſt attentively conſider what the *Rule* manifeſtly ſuppoſes, *viz.* that in Compt and Reckoning *B* is to allow Deduction at every Year's End, of ſuch a Part of his Principal as is equal to the preſent Worth calculate for the *Annuity* due at that *Year*'s End, together with the Intereſt of that Part till now, which exactly make up the *Year's Annuity*; and *A* being thus cleared at every *Year*'s End, if you calculate Intereſt for the *Annuity* now paid, you muſt alſo calculate at the ſame Rate for what cleared it, *viz.* that Part of *B*'s Principal, which was the preſent Worth of the *Year*'s Rent now cleared, together with the *ſimple Intereſt* of the ſaid Part till now; otherwiſe it is plain the Total of *B*'s Charge will not equal the Total of *A*'s, at the End of the Leaſe, as it is ſuppoſed to do by *A*'s receiving that principal Sum in full Payment; there is ſomething in this therefore, contrary to the Deſign of the *Queſtion*, which propoſes only *ſimple Intereſt* to both Parties, whereas *B* accumulates Part of his Principal with the bygone Intereſt of the ſaid Part, at every Year's End: But tho' this be done, *B* is ſtill a Loſer, becauſe *A* being every *Year* punctually paid of his *Annuity* by this Deduction, has all the poſſible Improvements of it, whereas *B* loſes the Improvements of the ſeveral *Years Intereſt* due before this *Year*, for that Part of the principal Sum which is now deduced, ſince he has but *ſimple Intereſt* before this, which is never allowed him till the Term of Payment of the Principal to which it belongs; therefore upon this Suppoſition *B* is a Loſer. And indeed this is the Injuſtice of all Calculations at *ſimple Intereſt*, even for Money lent on Bond, for if the Intereſt is not punctually paid, the Lender loſes the Uſe and Improvement of what is really due to him at the Term of Payment of the Intereſt. But again, I ſhall ſhew you that the preſent Worth found by this *Rule* will

will neceſſarly be leſs than that found by the firſt *Rule*, and conſequently *B.* is leſs a Loſer by this, (tho' he is poſitively a Loſer) than by the firſt, which is thus made clear, *viz.* if you find the Amount of the *Annuity* at *ſimple Intereſt*, it is plain by the Suppoſition of this *Rule*, That the Principal paid by *B*, ſummed up at *ſimple Intereſt*, will not amount to that, unleſs you add to it the Intereſt allowed from every *Year*, for the remaining Time, upon that Intereſt which, at that *Years* End; anſwers to that Part of the Principal which is the preſent Worth of the ſaid *Year's Annuity*; and therefore this Principal muſt be a leſs Sum than that, found by the firſt *Rule*, whoſe Amount at *ſimple Intereſt* without any Thing more, is equal to the Amount of the ſame *Annuity*.

You ſee then upon what the Injury is founded, which the Purchaſer of an *Annuity* ſuſtains by *ſimple Intereſt*; he is not allowed the like Improvement of his Money that the Seller has for his *Annuity* as in the ſecond *Rule*, or the Seller is allowed Intereſt for his *Annuity* after it is cleared by a mutual Compenſation, while the Purchaſer is not allowed Intereſt for what he balanced it with, as in the firſt *Rule*. I ſhall not therefore inſiſt upon any other *Queſtions of ſimple Intereſt*, but proceed to *compound Intereſt*, where all Things will be ſtrictly juſt and equitable.

Annuities at Compound Intereſt.

Quest. 1. Given the *Annuity*, *Rate* and *Time* to find the *Amount*, allowing *compound Intereſt* for every *Year*. There are ſeveral Ways for this, and all to the ſame Effect. 1ſt *Rule*, Find the Amount of every *Year's Annuity* at *compound Intereſt* from the Time it is due, to the End of the given Time, *i. e.* if the Time is 7 *Years*, you are to find the Amount of the 1ſt *Year's Annuity* with *compound Intereſt* for 6 *Years*, and of the 2d *Year* for 5 *Years*, and ſo on, to the Amount for 1 *Years*, which is *ſimple Intereſt*, by the Method delivered at the Beginning of § III, and add all theſe Amounts and the laſt *Year's Annuity* into one Sum, it is the Amount ſought: The Reaſon is plain from the Nature of the Queſtion. It will be as plain that a *Year's Annuity*, with all theſe Amounts, make a Rank of *Geometrical Proportionals*; for the leaſt of theſe Numbers is one *Year's Annuity*, the next greater is the Amount for one Year, (*i. e.* the *Annuity*, and a Year's *ſimple Intereſt* at the given Rate) the third is the Amount for 2 Years, (equal to the Amount for 1 Year, and 1 Year's Intereſt of the ſame) the fourth is the Amount for 3 Years (equal to the Amount for 2 Years and 1 Years Intereſt of the ſame) and ſo on, till the Number of Terms is equal to the given Number of Years; the common *Ratio* of theſe *Proportionals* is plainly the Amount of 1 *l.* for 1 Year at the given Rate, for as 100 to 106, (1 Year's Amount at 6.) ſo is 1 to 1.06, which is the *Ratio* of 100 and 106 by *Diviſion*, and is alſo the *Ratio* whereby the Amount of the *Annuity* at the ſame Rate, forborn for 1 Year after it is due, exceeds the *ſimple Annuity*, and whereby this Amount is again exceeded by its Amount for 1 Year, and ſo on, the Rate being the ſame thro' all. Therefore we have gained a 2d *Rule*, which

is

is more easy, *viz.* Take the Amount of 1 *l.* for one Year at the given Rate, and by this as a common *Ratio*, multiply the given Annuity, and this Product again by the same *Ratio*, and so on till you have raised a Rank of Proportionals as many in Number as the given Years of the Annuity, the Sum of this Rank is the Amount sought; and to find this easily, consult *Case* 3. § VII. following.

But you may do it as easily by this 3d *Rule*, *viz.* Say as 6 (or any given Rate) to 100 so is the given *Annuity* to a fourth Number, which if you consider as a Principal Sum, it is plain the given *Annuity* is one Years Interest thereof at 6 *per Cent.* therefore take this principal Sum, and find the Amount of it at *compound Interest* for the given Years, by the Method delivered in § III. From which Amount substract the said Principal, the Remainder is the *Amount* of the *Annuity* sought; because, the *Amount* of the principal Sum is equal to it self, and all the Improvement thereof, *viz.* every Years *simple Interest*, and all the Improvements of the same by calculating Interest upon Interest; but a Years simple Interest is equal to the given Annuity, consequently the Rule is good.

Example, What is the *Amount* of an *Annuity* of 30 *l.* forborn four Years, allowing *compound Interest* at 6 *per Cent. per Annum?* Answer, 131. 23848, which I thus found, as 6 to 100 so 30 to 500, then I find the Amount of the 500, by finding the Amount of 1 *l.* thus, 1 *l.* in one Year amounts to 1. 06 this multiplied by it self produces 1. 1236 the 2d Year, and this by it self produces 1. 26247696 for the 4th Year, which multiplied by 500, gives 631. 23848, and 500 substracted from this, leaves 131. 23848 the Amount sought.

Question 2. Given the *Annuity Rate* and *Time*, to find the *present Worth*, *compound Interest* allowed to both Seller and Purchaser. You may do it by the Reverse of any of the Rules of the last Question. 1. Find the *present Worth* of every Years *Annuity*, rebating *compound Interest*, and add all these into one Sum, it is the Thing sought. Or, because *compound Interest* being allowed to both, there is all the possible Improvement of the Annuity, and of the Price paid, and consequently neither Party can be wronged, it will therefore in this Case have the same Effect if you, 2*do*, Find the Amount of the Annuity for the given Time, and then find the *present Worth* of the *Amount* by the Rule in § III. But the most easy Rule is this, 3*tio*, Find a principal Sum so proportioned to the given Annuity as 100 to 6 (or any other given Rate.) Then, suppose this principal not to be due till the End of the given Years, and find the *present Worth* thereof, rebating *compound Interest*; substract that *present Worth* from the Principal, the Remainder is the *present Worth* of the *Annuity*. The Reason is, if that Principal had been due presently, and the Amount of it found for these Years, that Amount would be equal to it self, and all the Improvement thereof, (which Improvement is the *Amount of the Annuity*, as we see in the last Question.) But if the *present Worth* of a Part of that Amount (*viz.* The present worth of the Principal) be substracted from the present Worth of the whole Amount (which present Worth is the Principal it self) the Remainder

mainder muſt neceſſarly be the preſent Worth of the remaining Part of the Amount (which is the Amount of the Annuity) for to any Part of a principal Sum neceſſarly correſponds a like Part of the Amount.

Example, What is the *preſent Worth* of an *Annuity* of 30 *l.* to continue four Years, allowing 6 *per Cent. per Annum compound Intereſt*? Anſwer, 104.0531, *&c. lib.* which I found thus, as 6 to 100, ſo is 30 to 500, whoſe preſent Worth, rebating *compound Intereſt* for four Years, at the given Rate is 396.0468, *&c.* which ſubſtracted from 500, leaves 104.0531, *&c. lib.* the Thing ſought.

Question 3. Given the *Annuity*, *preſent Worth* and *Rate*, To find the *Time* in which that *preſent Worth* or *Principal*, will make an Amount equal to that of the *Annuity*. *Rule* find a principal Sum as before, ſo proportioned to the *Annuity* as 100 to 6 (or any given Rate,) from which Principal ſubſtract the given *preſent Worth* of the *Annuity*, the Remainder is the *preſent Worth* of that Principal ſuppoſed to be due at the end of the Time ſought, becauſe, as was demonſtrated in the laſt Queſtion, the preſent Worth of this Principal being ſubſtracted from it, leaves the *preſent Worth of the Annuity*, ſo this ſubſtracted from the ſaid Principal, muſt leave the *preſent Worth* thereof, and therefore by the Rule already delivered upon this in § III. ſeek in what Time the *preſent Worth* now found will Amount to the Principal found, which is the Time ſought.

Exampte, There is an *Annuity* of 30 *l.* if I advance 104.0531 *l.* upon the ſame, how long may I keep it for payment of that Money, allowing *compound Intereſt*? Work by the Rule and you'll find the Anſwer four Years very near.

Quest. 4. Given the *preſent Worth*, or Money to be paid for the Purchaſe, the *Time* and *Rate* to find the *Annuity* which that *preſent Worth* will purchaſe to continue that Time, allowing *compound Intereſt* at the given Rate. *Rule*, Suppoſe any Annuity at pleaſure to continue the given Time, find the *preſent Worth* thereof, rebating at the given Rate, by *Queſt.* 2d, then ſay by Proportion as the *preſent Worth found*, is to the ſuppoſed *Annuity*, ſo is the given Sum of Money to the *Annuity* ſought. *Example*, 500 *l.* is to be laid out on an Annuity to continue four Years, allowing *compound Intereſt* at the Rate of 6 *per Cent per Annum*: What Annuity will it purchaſe? I ſuppoſe an Annuity of 30 *l.* whoſe preſent Worth by *Queſt.* 2. is 104.0531, *&c.* then as 104.0531 to 30 *l.* ſo is 500 *l.* 144.15716, *&c. l.* the Annuity ſought very near.

N. B. If Annuities are payable in half Year and quarterly Payments, the *compound Intereſt* muſt be calculate accordingly by the ſame Rule as for yearly Payments.

Of Annuities in Reverſion.

Hitherto I have conſidered Annuities as immediately entred upon, *i. e.* the firſt Year to commence preſently, or at Payment of the Money, but if they are in *Reverſion*, we muſt conſider the Time betwixt the Payment of the

Money, and the Commencement of the first Years Possession. Andt herefore, 1*mo*, in *Quest.* 2d, having found the *present Worth*, as if the *Annuity* were immediately entred upon, find by another Operation the present Worth of the former, rebating for the Time of the Reversion (*i. e.* betwixt the Payment and Commencement) this last *present Worth* is the Answer. 2*do*, In *Quest.* 3d and 4th, take the given present Worth, and find its Amount for the Time of *Reversion*, and then proceed with this Amount as the present Worth at the Commencement of the Annuity.

OBSERVE, *Annuities*, *Pensions* and *Leases* of Houses or Lands, are all of the same Nature, wherein the same Kind of Questions occur. I shall add one or two with some Variety of Circumstances, and shew how they must be done, and leave them to your Excercise. 1. There is a Piece of Land worth 20 *l.* yearly Rent, and 100 *l.* of *Fine* to be presently advanced for a Lease of 21 Years, the Master is willing to quit the *Fine* and augment the Rent. *Rule*, Find by *Quest.* 4. what Rent or Annuity to continue 21 Years at the agreed Rate; 100 *l.* would purchase, and add that to 20 *l.* the Sum is the Rent to be paid. *Note*, If the whole *Fine* is not to be taken away, then find the Annuity answering to that which is to be diminished.

2. THERE is a Piece of Land to be Let at 12 *l.* yearly, and a *Fine* of 30 *l.* for a Lease of 19 Years, the Tenent is content to pay more *Fine*, and reduce the Rent to 8 *l.* What must he pay? *Rule*, Take the Difference of 12 and 8 *l.* Rent, it is 4 *l.* find by *Quest.* 2d, the present Worth of an Annuity of 4 *l.* at the agreed Rate for 19 Years, that is the additional *Fine* to be paid. *Note*, If he would take away the whole Rent, it is the same Thing, find the present Worth of 12 *l.* Annuity, and add that to the 30 *l.*

3. THERE is a Piece of Land to be Let for 21 Years, at 10 *l.* yearly Rent, and 20 *l.* of *Fine* If the same be Let for 30 Years at the same Rent, how much *Fine* ought to be paid? *Rule*, Find the Annuity which 20 *l.* will purchase for 21 Years, at the agreed Rate (that added to 10 *l.* is the true Rent) then find what is the present Worth of the Annuity last found, rebating for 30 Years, and that is the Fine to be paid.

4. A Tenant has 7 Years yet to come of a Lease of 21 Years, for which he paid 40 *l.* of *Fine*, and 15 *l.* yearly Rent, he would renew the Lease to 19 Years, to commence immediately; What *Fine* must he pay in ready Money? *Rule*, Find what yearly Rent to continue 21 Years, the given *Fine* of 40 *l.* is worth. Then find the present Worth of this last found yearly Rent, to continue for 12 Years, the Years to be added to his old Lease. And lastly, Find the present Worth of this last present Worth rebating for the Time that remains of the old Lease at the agreed Rate *compound Interest*. And this is the *Fine* to be presently paid for renewing the Lease 12 Years longer. The Reason of every Step is plain from the Nature of the Question, compared with former Questions.

Of the Purchaſe of Freehold or real Eſtates, to continue for ever.

QUEST. 1. What is a Free-hold Eſtate of 50 *l.* payable yearly, to continue for ever, worth in ready Money, allowing *compound Intereſt* to the Buyer at *6 per Cent. per Annum? Rule*, Say as 6 (or any given Rate) to 100, ſo is the yearly Rent to the Value ſought. This is plain, for there muſt be given ſuch a Sum as laid out at Intereſt, ſhall yield the given yearly Rent. But there are two Things ſuppoſed, 1ſt, That the Rate of Intereſt continue always the ſame. And 2d, That the Land be always of the ſame Value. Any of which changing, one Party will be a Loſer, but there is no Help for ſuch Things, the Queſtion muſt be ſolved upon a fixed Suppoſition.

QUEST. 2. Having the yearly Rent and Principal paid, you'll find the Rate of Intereſt; for as the Principal to the Rent, ſo is 100 to the Rate *per Cent.*

QUEST. 3. Having the Principal and Rate, you'll find the Rent which that Principal will purchaſe, for its one Years Intereſt of the given Principal at the given Rate.

§ V. Practical Queſtions *of* Factorſhip, *and* Gain or Loſs upon Time, *which I thought proper to add, that the practical Part of this* Arithmetick *may be reaſonably compleat.*

Of Factorſhip.

QUEST. 1. A MERCHANT delivered 100 *l.* to his Factor, allowing him to add 30 *l.* of his own, and valued his Service worth 40 *l.* what Share of the Gain muſt he have? *Anſwer*, The Gain muſt be divided betwixt them in Proportion of 100 *l.* (for the Merchant) to the Sum of 30 and 40, *viz.* 70 *l.* (for the Factor) by the *Rule of Fellowſhip.*

QUEST. 2. A Merchant delivers his Factor 100 *l.* to which the Factor joined 30 *l.* and received $\frac{1}{7}$ of the Gain, what was his Service valued at? If the Factor had $\frac{1}{7}$, the Merchant muſt have $\frac{2}{7}$, therefore ſay, as 2 to 1, ſo is 100 to 50, which if the Factor had put in, he ſhould then have $\frac{1}{7}$ of the Gain, wherefore take 30, what he put in, from 50, the Remainder 20 is the Value of his Service.

QUEST. 3. A Merchant delivers to his Factor 100 *l.* and having valued his Service at 20 *l.* allows him $\frac{1}{7}$ of the Gain, what did the Factor put in? Anſwer 30 *l.* it is found the ſame Way as the laſt *Queſtion.*

QUEST. 4. A Merchant delivers to his Factor 100 *l.* and for his Service allows him $\frac{1}{7}$ of the Gain, what Stock is his Service worth? Take $\frac{1}{7}$ of 100 *l.* and that is the *Answer*, *viz.* 25: But if the Value of the Service is given to find the Share of Gain, then Proportion it by *Fellowship*.

QUEST. 5. A Merchant delivers to his Factor 120 *l.* and allows him $\frac{1}{7}$ of the Gain for his Service, but if the Factor will have $\frac{1}{5}$, what must he put in? Take $\frac{1}{7}$ of 100 *l. viz.* 25, this is the Value of the Service; then proceed by *Quest.* 3.

Of Loss and Gain upon Time.

QUEST. 1. If I buy Suggar at 18 *s.* the Stone, and sell the same for 25 *s.* with 4 Months trust, what is gained *per Cent. per Annum*? Substract 18 from 25, the Remainder is 7; and say, if 18 *s.* in 4 Month, gain 7 *s.* what will 100 *l.* gain in 1 Year?

QUEST. 2. If I give 16 *s.* for the *Stone*, and sell it again for 20 *s.* how long Trust may I give to gain 6 *per Cent. per Annum*? Take the Difference of 16 and 20, it is 4, then say 100 *l.* give 6 *l.* in 1 Year, in what Time will 16 *s.* give 4 *s.*?

QUEST. 3. If I buy for 16 *s.* the *Stone*, and sell again with 3 Months Trust, how much ought I to take, so as to gain 8 *per Cent. per Annum*? Find 3 Months Interest of 100 *l.* at the given Rate; then say, if 100 give that Interest, what will 16 *s.* give? add this Interest to 16 *s.* and the Sum is the Price sought.

QUEST. 4. If I sold 1 *Stone* for 18 *s.* and giving 4 Months Trust, gained 4 *per Cent. per Annum*, what did 1 *Stone* cost me? Find 4 Months Interest of 100 *l.* at the given Rate, which add to 100 *l.* and say, as that Sum to 100 *l.* so is 18 *s.* to the *prime Cost* sought.

Note, IF you suppose Loss in any of these Cases, you'll easily find what Alteration there must be of the Work.

QUEST. 5. If I buy for 12 *s.* the *Stone*, and sell for 15 *l.* with 10 Months Trust, whether am I Gainer or Loser, when the Rate of Interest is 20 *per Cent. per Annum*? Find what is the Amount of 12 *s.* for 10 Months at the given Rate, if it be either greater or lesser than 15, you are accordingly as much a Loser or Gainer as the Difference is.

§ VI. *Questions of Exchanges.*

I HAVE in the preceeding *Treatise* given you several useful *Questions* upon this Subject; but the practical Part of *Arithmetick* depending so much upon a certain Sagacity in apprehending the true *State* and *Sense* of a *Question*, and Reasoning upon the *Nature* of it, I was easily engaged to add the following *Questions*, which are both curious and useful, at least so far as you may, by considering them, be helped to make a judicious *Application* of the *Ge-*

nera

neral Rules of *Arithmetick*, and in what follows you'll find nothing but the *Rule of Three* applied.

QUEST. 1. and 2. A Merchant at *London* remits to *Amſterdam* at the Rate of 18 *d. ſterl. per Guilder*, his Correſpondent at *Amſterdam* remits the ſame by Order to *Bourdeaux* at 3 *Guilders per Crown*, rebating $\frac{1}{8}$ *per Cent.* for his Proviſion, how much will the Merchant receive at *Bourdeaux* for 10 *l. ſt.* given out? *Rule*, ſay 18 *d.*——1 *Guilder*——10 *l.*——133$\frac{1}{3}$ *Guilders*, then for the Rebatement, ſay 100——$\frac{1}{8}$——133$\frac{1}{3}$——$\frac{4}{25}$, which ſubſtracted, there remains 132$\frac{8}{25}$, which is paid out at *Amſterdam*. Again, 3 *G.*—— 1 *Crown*——132$\frac{8}{25}$; anſwer, 44$\frac{8}{75}$ *Crowns*, 2*do*, ſuppoſe that he draws upon *Bourdeaux* for theſe *Crowns*, at 50 *d. per Crown*, paying 5 *s.* of *Brockage*, and allowing alſo $\frac{1}{8}$ *per Cent.* to his Correſpondent at *Bourdeaux* for his Proviſion, what does he gain or loſs by this Negotiation? Firſt calculate and deduce the Proviſion, then find what he receives for drawing the Remainder, from which ſubſtract 5 *s.* and compare this laſt Remainder with 10 *l.* and you'll find the Gain or Loſs.

QUEST. 3. *Amſterdam* remits to *Paris* at 2$\frac{1}{2}$ *Guilders per Crown*, which *Paris* remits to *London* at 1 *Livre* for 16 *d.* what is the Exchange between *Amſterdam* and *London*? as 1 *Livre*——16 *d.*——1 *Crown* or 3 *Livres*—— to 48 *d.* equal to 2$\frac{1}{2}$ *Guilders* at *Amſterdam*.

QUEST. 4. How many *Florins* muſt I give for 100 *Roſe Nobles*, worth 11 *Florins* a Piece, allowing $\frac{1}{2}$ of a *Florin* of Profit upon each *Roſe Noble*, ſay 1 *R.*——11$\frac{1}{2}$ *Fl.*——100 *R.* Anſwer 1116$\frac{2}{3}$ *Fl.*

QUEST. 5. How many *Ducats* at 5 *Florins* a Piece, ought I to receive for 1246 *Florins*, giving $\frac{1}{2}$ *Florins* of Profit upon each *Ducat*, 5$\frac{1}{2}$ *Fl.*——1 *Duc.*——1246 *F.*——Anſwer 243$\frac{7}{11}$ *Duc.*

QUEST. 6. A *Rix-dollar* is worth at *Amſterdam* 50 *Sols*, and at *Coningsberg* 90 *Gros*; the Exchange betwixt *Coningsberg* and *Amſterdam* is at 230 *Gros* for 6 *Florins* (equal to 120 *Sols*) whether is it moſt profitable that *Amſterdam* remit to *Coningsberg* in Specie or by Exchange? *Rule*, as 50 *s.*——90 *Gros*—— 120 *s.*——216 *Gros*, which muſt be remitted in Specie, *i. e.* in *Rix-dollars*, but by the Exchange there will be 230 *Gros* for 120 *s.* therefore it is beſt to remit by Exchange, the Difference is 14 *Gros*, which will be had more, for every 6 *Florins*.

Note, IF *Amſterdam* owe *Coningsberg* 1000 *Gros* to be remitted, and you would know which to chuſe, and what is ſaved upon the whole, find what 1000 *Gros* will coſt, both in Specie and by Exchange, and then you'll have the Difference. Thus as 90 *Gros*——50 *s.*——1000 *Gros*——555$\frac{5}{9}$ *s.* which muſt be paid in Specie. Again, as 230 *Gros*——120 *s.*——1000 *Gros*—— 521$\frac{7}{23}$ to be paid by Exchange.

QUEST. 7. *Amſterdam* draws upon *Rouan* 400 *Crowns* at 87 *d. Flemiſh*, *per Crown*, for which *Rouan* re-draws upon *Amſterdam* at 90 *d.* with $\frac{1}{4}$ *per Cent.* for Proviſion, what has *Amſterdam* gained or loſt? Say 1 *Crown*——87 *d.* 400 *Crowns*——34800 *d.* received by the Draught. Again, adding 2 for Proviſion to 400 *Crowns*, as 1 *Crown*——90 *d.*——402——36180, paid for the Re-draught, ſo that *Amſterdam* has loſt 1380 *d.*

QUEST.

QUEST. 8. *Amſterdam* remits to *Paris* 1000 *Crowns* at 78 *d. per Crown*, paying for *Brockage* 540 *d.* which *Paris* remits to *Amſterdam* at 80 *d. per Crown*, rebating ½ *per Cent.* for Proviſion, what is gained or loſt? Say 1 *Crown* —— 78 *d.* —— 1000 *Crowns* —— 78000, to which add 540, the Sum is 78540 *d.* given out. Again ſubſtract 5 the Proviſion from 1000, remains 995 *Crowns*, then 1 *Crown* —— 80 *d.* —— 995 —— 79600 *d.* received, ſo there is gained 1060 *d.*

QUEST. 9. If Exchange betwixt *Midleburg* and *London* is at 35 *Sols* for 1 *l. ſt.* alſo betwixt *Midleburg* and *Amſterdam* at 1½ *per Cent.* of Advance for *Midleburg* (*i. e.* 101½ *s.* at *Amſterdam* worth 100 *s.* at *Midleburg*,) at what Rate ought *Amſterdam* remit to *London*, to receive the Return by *Midleburg* at the foreſaid Courſe, and gain 5 *per Cent?* Find the Courſe betwixt *London* and *Amſterdam* thus, as 100 *s. Midleburg* to 101½ *Amſterdam*, ſo is 35 *Midleburg* to 35 11/40 *Amſterdam*, which is the Value of 1 *l. ſt.* ſince 35 *s. Midleburg* is equal to 1 *l.* then to remit to *London* with 5 *per Cent.* Gain, he muſt pay leſs than the Courſe in Proportion of 100 to 105, therefore ſay, 105 —— 100 —— 35 11/40 —— 33 17/21, which is the Rate at which he ought to remit to *London*; or you may find this Anſwer at once, thus, 105 —— 101½ —— 35 —— 33 17/21, the Reaſon of which you'll find eaſily by comparing the former Proportions.

QUEST. 10. *A* of *Rochel* orders *B* of *Amſterdam* to draw upon him at 1 *Crown* to 97¼ *Sols*, and to remit the ſame to *Hamburg* at 34 *Sols* for 1 *Dollar*, *B* cannot draw but at 97 *Sols* for 1 *Crown*, how ought he to remit to anſwer the Order? ſay 97¼ —— 97 —— 34 —— 33 17/21 *Sols*, which is the Rate he ought to remit at for 1 *Dollar*: Which is plain, for if the Courſe is above the Order in drawing, it ought to be ſo proportionally in remitting, to Anſwer that Order.

QUEST. 11. *A* of *Amſterdam* orders *B* of *Paris* to draw upon him at 99½ *d.* for 1 *Crown*, and to remit the ſame to *London* at 49¼ *d. ſt.* for 1 *Crown*, *A* can remit at 50½ *d.* for 1 *Crown*, how ought he to draw, to follow his Order? Anſwer, at 101 *d.* for 1 *Crown*, becauſe 49¼ —— 99½ —— 50½ —— 101, for if *A* receive more than his Order at *London* by the Remittance, he ought to pay proportionally more at *Paris* for the Draught, to keep up to that Order.

QUEST. 12. *A* of *Coningsberg* orders *B* of *Amſterdam* to remit to *Rouan* at 103½ *d. Flemiſh*, for 1 *Crown*, and to draw the ſame on him at 225 *Gros*, for 1 *l. Flemiſh*; but *B* cannot draw under 230 *Gros* for 1 *l.* how ought he to remit, to follow his Order?

THAT you may more diſtinctly underſtand the Reaſoning upon this Caſe, let it be ſet down in this Manner. The Queſtion is no more than to find the Courſe in remitting to Anſwer the Order; and this may be found, either by a direct or indirect Proportion, as you ſuppoſe the one or t'other Species fixt. Suppoſe the Species to be given and received at *Amſterdam*, is fixt as 103½ *d.* and 1 *l.* It is plain, if *A.* pay dearer at

Con.	*Am.*	*Ro.*
	103½	— 1 *Cro.*
225 *G.*	— 1 *l.*	
	230	— 1 *l.*

Con-

Coninsberg for 1 *l.* by that Courſe than his Order, to anſwer that Order, he ought to receive more at *Rouan* for 103½ *d.* By this direct Proportion as 225 — 230 — 1 — 1 4/9 *Crowns*, which he ought to receive at *Rouan* for 103½ *d.* at *Amſterdam*, which is the Rate of remitting ſought. But the Species at *Coninsberg* and *Rouan* being fixt, if 1 4/9 *Crowns* thus give 103½ at *Amſterdam*, then 1 Crown will coſt leſs at *Amſterdam*; ſo that the Anſwer of the Queſtion will alſo be found by an indirect Proportion thus, 225 — 230 — 103½ — 101½ *d.* which is the Courſe for one Crown to anſwer the Order. The Matter in ſhort is this, to receive more at *Rouan* than one Crown (which is direct Proportion) or to pay leſs at *Amſterdam* for the ſame Crown (which is indirect Proportion) is all one Thing.

QUEST. 13. *A.* of *Cologn* orders *B.* of *Amſterdam* to remit to *Dantzick* at 1 *l. Flemiſh* for 230 *Gros*, and to Draw upon him at 100 for 102½ to be paid at *Cologn*. But according to the Courſe, *B.* remits at 1 *l.* for 228 *Gros*, and Draws at 100 for 102. Whether has he anſwered the Order, or not? If the Order is anſwered, then muſt he pay as much leſs at *Cologn* as he receives at *Dantzick*, for the ſame Sums received and paid at *Amſterdam*, and to find if it is ſo, ſay 230 — 228 — 102½ — 101 4/5, which according to the Courſe he pays at *Cologn*, inſtead of 102 therefore the Order is not obſerved, and *A.* is a Gainer.

QUEST. 14. *A.* of *Amſterdam* orders *B.* of *London* to Draw upon *Rouan* at 35 *d. ſterl. per* Crown, and to remit to him at 1 *l. ſterl.* for 35 Sols. But according to the Courſe *B.* Draws at 34½ *d. per* Crown, and remits at 1 *l.* for 36½ Sols. Whether has he anſwered the Order? Set down the Queſtion thus,

IT is plain, if *A.* receive more Sols by the Courſe than by the Order for 1 *l.* paid at *London*, he ought alſo to pay more Crowns for 35 *d.* received at *London* in direct Proportion of 35 — 36½, and if 35 *d.* buy more than one Crown, then one Crown will coſt leſs than 35 *d.* therefore ſay by indirect Proportion, as 35 *s.* 36½ *s.* 35 *d.* to 33 4/7. Or, it's all one, if you State it directly 36½ — 35 — 35 — 33 4/7, which ought to be received at *London* for one Crown at *Rouan* to make the Courſe anſwer in Proportion to the Order; whereas there is 34 *d.* received at *London*, therefore the Order is not obſerved.

Amſt.	*Lond.*	*Rouan*
	35 *d.* —	1 *Cro.*
35 *Sols* —	1 *l.*	
36½ *s.* —	1 *l.*	
	34½ *d.* —	1 *Cro.*

QUEST. 15. *A.* of *Rouan* orders *B.* of *Amſterdam* to Draw upon him at one Crown for 97 *d. Flemiſh*, or upon *London* at 1 *l. ſterl.* for 35 Sols. *B.* according to the Courſe can Draw upon *Rouan* at 98 *d. per* Crown, and upon *London* at 35½ Sols for 1 *l. ſterl.* which are both above the Order. Which exceeds it moſt? Place the Queſtion thus,

IF the Courſe and Order in both are proportional, then will the four Numbers under *Amſt.* be proportional, which they are not, for as 97 *d.* 35 *S.* 98 *d.* 35 5/7, which laſt Term is leſs than 35½, received in Drawing by the Courſe upon *London*, therefore it is beſt to Draw upon *London*, becauſe the *Ratio* of the Courſe and Order exceeds that to *Rouan*.

Rouan	*Amſter.*	*London*
1 *Cro.* —	97 *d.*	
	35 *S.* —	1 *l.*
1 *Cro.* —	98 *d.*	
	35½ *S.* —	1 *l.*

QUEST

QUEST. 16. *A* of *Dantzick* orders *B* of *Amsterdam* to remit to him at 1 *l. Flemish* for 220 *Gros*, or to *Hamburg* at $33\frac{1}{3}$ Sols for one Dollar. But *B* finding the Course to *Dantzick* at 1 *l.* for 218 *Gros*, and to *Hamburg* at 34 *s.* for one Dollar, both of which differ from the Order to *A*'s Loss, which shall he chuse to come nearest his Order? Place the Example as here.

Dant.	*Amst.*	*Ham.*
220 *Gros*	1 *l.*	
	$33\frac{1}{3}$ *s.*	1 *Doll.*
218 *Gros*	1 *l.*	
	34 *s.*	1 *Doll.*

THE Answer may be found two Ways, first by supposing the Species at *Dantzick* and *Hamburg* to be fixt; find the Value of 220 *Gros*, according to the Course thus, 218 *Gros* ——1 *l.*——220 *Gros*——$1\frac{1}{109}$; put the last two Terms in Place of the first two, in the *Question*, and say $33\frac{1}{3}$ *s.*——34 *s.*——1 *l.*——$1\frac{1}{107}$ *l.* which in Proportion of the Course and Order to *Hamburg*, must be paid at *Amsterdam* for 220 *Gros* remitted to *Dantzick*, instead of $1\frac{1}{109}$ *l.* which is to be paid for the same in Proportion of the Course and Order to *Dantzick*; but $1\frac{1}{110}$ is less than $1\frac{1}{107}$ by the Difference of $\frac{43}{7303}$ *l.* therefore it is best to remit to *Dantzick*.

AGAIN, suppose the Species to be paid at *Amsterdam* to be fixt, as 1 *l. Flemish*; find what *Dollars* will be bought for 1 *l. Flemish*, according both to the Course and Order thus, $33\frac{1}{3}$ *s.*——1 *Doll.*——1 *l.*——$3\frac{39}{107}$ *Dollars* by the Order, then 34 *s.*——1 *Doll.*——1 *l.*——$3\frac{9}{107}$ *Dollars* by the Course, and the *Question* will stand thus.

Dant.	*Amst.*	*Ham.*
220 *Gros*	1 *l.*	$3\frac{39}{107}$ *Doll.*
218 *Gros*	1 *l.*	$3\frac{9}{107}$ *Doll.*

NOW, if the Course and Order in each are proportional, there is equal Loss in both, but they are not so; for as 220——218——$3\frac{39}{107}$, $3\frac{429}{7373}$ *Doll.* which Proportion of the Course and Order to *Dantzick*, is to be received at *Hamburg*, instead of $3\frac{39}{107}$, but by the Course there will be only $3\frac{9}{107}$ *Dollars* received, which is less than $3\frac{429}{7373}$, by the Difference of $\frac{2142}{736321}$ *Dollars*, therefore it is best to remit to *Dantzick*. It is plain, either of these Methods solves the *Question* answerable to all the Design of it, which is no more than to know which Place the Factor shall remit to, and come nearest the Order.

§ VII. *Of Geometrical Progression.*

I HAVE in *Chapter* VI. of the preceeding *Treatise*, explained and demonstrated the chief Properties of *Geometrical Proportion*. With Respect to *Progression*, which is a Rank in continual *Proportion*, as already explained, I have shown how some of the most ordinary *Questions* relating thereto may be solved, [See toward the End of § III. *Chapter* VI.] and then indeed I did not think of any easier *Rule* which I could demonstrate: But these being very tedious, I applied my self afterwards to find shorter Work, and add more, which I shall here teach and demonstrate: Tho' there is a great Variety of *Questions* upon

upon this Subject, as I have already observed, which I must leave untouched, yet you'll have here the most ordinary and useful, if any of them are so.

Case 1. Having one of the Extremes, and the mean Term next it, or instead of this the *Ratio*, to find a Term at any given Distance from the Extreme, without producing all the intermediate ones? *Rule*, Find the 2d and 3d Mean from this given Extreme by former *Rules*, and you may find any other Term at any other Distance, thus, if the 2d Mean is multiplied by its self, and the Product divided by the given Extreme, the Quote is the 4th Mean; also the 3d Mean by its self, and so divided, quotes the 6th Mean; by the 9th you'll find the 18th; or multiply the 6th and 4th, and divide the Product as before, it will quote the 10th; and generally multiply a Term at any Distance from the given Extreme exclusive, by a Term at any Distance, and divide the Product by the said Extream, the Quote is the mean Term at a Distance equal to the Sum of the Numbers expressing the Distances of the other two. The Demonstration of this *Rule* I have upon another Occasion given in § III. of this *Appendix*; but I shall repeat it here, *viz.* by *Proposition 6.* of *Geometrical Proportion*, the Product of the two Extremes, and of any two Terms equally distant from these Extremes, and the Square of the middle Term when the Number of Terms is odd, are all equal, *i. e.* these Terms are proportional, therefore the Product of these two Means, or the Square of the middle Term divided by one of the Extremes, quotes the other. But this is the very Case in Hand, for the Term sought being taken for one Extream, the Terms that are multiplied are equally distant from this, and the Extreem given; and the Term multiplied by its self is a middle Term betwixt them, as is very plain; so in this Rank, 3 : 6 : 12 : 24 : 48 : 96, *&c.* if the 2d Term from 3, *viz.* 12, is multiplied by its self, and divided by 3, the Quote is 48, *viz.* a Term doubly distant, or the 4th Term from 3, which must be, since 12 is a middle Term betwixt 3 and 48. Again, 12 and 24 are equally distant from 3 and 96, therefore their Product divided by 3, quotes 96, or divided by 96, quotes 3.

Observe, If the given Extreme is 1, the Work of this *Rule* is easy, for you have no Division, and if it is not 1, you may make it more easy by this Method, *viz.* suppose the given *Ratio* to be the 2d Term of a Rank beginning with 1, find by the preceeding *Rule* a Term in this Rank at the given Distance from 1, then because the two Ranks have the same *Ratio*, it will be in Proportion as 1 to the Term found at the given Distance from it, so is the lesser Extreme given to the Extreme sought; but if the greater Extreme is given, say as the Term found is to 1, so is the greater Extreme given to the Term sought.

Practical Examples, a Fermer sold 24 Bolls of Wheat thus, he was to have such a Sum as the last Boll would come to, by doubling the Numbers from 1 *Farthing* 23 Times, *i. e.* upon the first Boll was to be laid 1 *f.* upon the 2d, 2, upon the 3d, 4, *&c.* how much would the 24 Bolls cost? It is plain the Answer is the last and greatest Term of a Rank of *Geometrical Proportionals*, of which there is given the least Extreme 1 *Farthing*, and the *Ratio* 2, and the Number of Terms 24. The 1st and 2d Mean from 1 are 2 and 4, 4 Times 4 is 16 for the 4th Mean, 16 Times 16 is 256 for the 8th Mean, 256 Times

256 is 65536 the 16th Mean, which multiplied by 256 the 8th Mean, produces 16777216 the 24th Mean, but we ought to have but 23 Means, therefore divide this by the *Ratio* 2, the Quote is the 23d Mean, or the laſt Term ſought, *viz.* 8388708 *f.* equal to 8738 *l.* 2 *s.* 8 *d.*

Note, If the Price was the Sum of the *Farthings* laid upon every Boll, then find it by the next Caſe.

Caſe 2. Given both the Extremes, and the Term next to either of them, or inſtead thereof the *Ratio* by which this may be found, to find the Sum of all the Terms? *Rule*, Call that Extreme, whoſe next Term is given, the firſt Term of the Rank, and the other the laſt Term, then ſubſtract the leſſer from the greater Extreme, multiply the Difference by the firſt Term, and divide the Product by the Difference of the ſaid firſt Term and the Term next it, the Quote is the Sum of all the Terms, except the laſt, which added, gives the Anſwer. *Example*, 3 : 6, *&c.*——192, the Difference of 192 and 3, is 189, this multiplied by 3, produces 567, which divided by 3, the Difference of 6 and 3 quotes 189, to which add 192, the Sum 381, is the Sum of the whole Rank.

Demonſtration of the *Rule*, by Propoſition 4th of *Geometrical Proportion*, in every Rank of *Proportionals*, the Sum of all the *Antecedents* is to the Sum of all the *Conſequents*, as any one *Antecedent* to its *Conſequent*; and in a Rank of continual *Proportionals*, every Term is an *Antecedent*, except the laſt, and every Term is a *Conſequent* except the firſt, therefore the Sum of all the *Antecedents* is equal to the Sum of the whole Rank, except the laſt, and the Sum of all the *Conſequents* is equal to the Sum of all the Rank, except the firſt, conſequently the Difference of theſe two Sums is equal to the Difference of the Extremes. Let *A* repreſent the firſt Term of any Rank, *C* the Term next it, or its *Conſequent*, alſo *ſ* the Sum of all the *Antecedents*, and *S* the Sum of all the *Conſequents*, and theſe are proportional, *A* : *C* :: *ſ* : *S*, and alternately *A* : *ſ* :: *C* : *S*; alſo inverſely *C* : *A* :: *S* : *ſ*, and alternately *C* : *S* :: *A* : *S*, but by *Propoſition* 5th, *Geometrical Proportion*, if four Numbers are proportional, the Difference of the *Antecedents* is to the Difference of the *Conſequents*, as one *Antecedent* to its *Conſequent*, ſo theſe are proportional, *C* leſs *A* : *S* leſs *ſ* :: *A* : *ſ*, when the firſt Term is the leaſt Extreme, but if the firſt Term is the greateſt Extreme, then make it *A* leſs *C* :: *ſ* leſs *S* :: *A* : *ſ*, whence the *Rule* is manifeſt for the Product of the middle Terms divided by one Extreme, quotes the other.

Conſequence to this *Demonſtration*, if the *Ratio* is double or 2, then the Difference of the Extremes is the Sum of all the Terms, except the greateſt, becauſe in that Caſe *C* leſs *A*, is equal to *A*, and therefore the *Multiplier* and *Diviſor* is the ſame, and conſequently the *Quote* and *Multiplicand* are equal.

Caſe 3d. If one Extreme the *Ratio* and Number of Terms be given to find the Sum, you muſt with the given Extreme, *Ratio* and Number of Terms, find by the firſt Caſe the other Extreme, and the mean Term next either of the Extremes (it will be moſt convenient to take that next the leſſer Extreme) and then proceed to find the Sum by *Caſe* 2d.

Practical Examples of theſe two laſt Caſes, A Gentleman left his Eſtate in this Manner, *viz.* To his eldeſt Son 2916 *l.* and to the youngeſt 4 *l.*

every

every Son's Portion being Triple to the next younger. How much was the whole Eſtate? Anſwer 4372 *l.* it is plain the Anſwer of this Queſtion is the Sum of a *geometrical Progreſſion*, whoſe Extremes are 4, and 2916, and the *Ratio* 3, and belongs to Caſe 2d. By the *Ratio* find the Term next above 4, it is 12. The Difference of 2916 *l.* and 4, is 2912, which multiplied by the leſſer Extreme 4, produces 11648, and this divided by 8 (the Difference of 12 and 4) quotes 1456 the Sum of all the Terms except the laſt, therefore add the laſt 2916 *l.* the total Eſtate is 4372 *l.*

If the youngeſt Son's Portion 4 were given, and the *Ratio* 3; alſo the Number of Sons 7, the Queſtion belongs to Caſe 3d. You may find the Eſtate, by finding the eldeſt Son's Portion, and then the Sum, agreeable to the Rule; and you may often find this without producing them all, if you divide the greater Extreme by the leſſer, and then take the *Ratio* and multiply it by it ſelf till the Product is equal to the ſaid Quote; for that Product is a Term in a Rank of the ſame *Ratio*, proceeding from 1, at the given Diſtance from 1, as has been ſhown at the Obſerve upon Caſe 1ſt. For as the leſſer Extreme of any Rank to the greater, ſo is 1 to a Term equally diſtant from it, and in the ſame *Ratio*, whereby the Thing is clear; but the compend of this Work lies in this, that you can find that Product without producing every Term; for the 4th Term, from 1 *Excluſive*, multiplied by it ſelf, produces the 8th Term; the 3d and 4th produce the 7th, *&c.* whereby you have the Product ſought with more Eaſe.

Example, A Gentleman left his Eſtate among his Sons thus, 4 *l.* to the youngeſt, and 2916 to the eldeſt, every Son's Portion was double to the next younger. How many Sons had he? The *Ratio* is 2, by which if 4 is multiplied, and every product *Succeſſive* till you come to 2916, you'll find the Number of Terms, *i. e.* Sons to be 7.

Caſe 5th and 6th, Given the two Extremes, and the Sum of all the Terms to find the *Ratio* and the Number of Terms. *Rule*, Take the Difference of the Extremes, and multiply it by one of the Extremes, divide the Product by the given Sum leſs the other Extreme, the Quote is equal to the Difference of that Extreme which was multiplied, and the Term next it; therefore ſubſtract this Quote from, or add it to the ſaid Extreme according as it is the greater or leſſer Extreme, and the Difference or Sum is that next Term, and conſequently you'll have the *Ratio* by Diviſion. This Rule is a plain conſequence of the Demonſtration of Caſe 2. as you'll eaſily ſee. Then having found the *Ratio*, find the Number of Terms by Caſe 3.

Example, Having ſold a Houſe for 160 *l.* it is to be paid at ſeveral Payments, which are to be in *Geometrical Progreſſion*, the firſt to be 4 *l.* and the laſt 108 *l.* What is the *Ratio* by which they exceed one another, and how many Payments are there? Or, which is all one, What are the reſt of the Payments? By the Rule, the *Ratio* is found to be 3, for 108 leſs 4 is 104, this multiplied by 4 produces 416, then 160 leſs 108 is 52, by which divide 416, the Quote is 8, to which add 4 the Sum 12 is the 2d Payment, the *Ratio* of 12 and 4 is 3, therefore by Multiplication, you'll find the 3d Payment to be 36, the 4th, 108, ſo that the Payments are in Number 4.

CHAP. II.

Of Book-keeping.

§ I. WHEN any Art depends upon few, and theſe general Principles, whereby it is applicable to a variety of Things, which tho' different among themſelves, have yet a common Nature that makes them equally ſubject to the ſame general Rules; It is very reaſonably judged to be ſufficient, that ſome particular Branch of the Application be clearly expoſed. That Branch indeed, ought to be ſuch as, by it, the Nature, Deſign and Tendency of the Art may beſt appear: For where greateſt variety of Circumſtances occur, there we learn beſt the Senſe of general Rules, and what ought to be allowed to different Circumſtances, ſo as to obtain the End. Accordingly I have in the preceeding Treatiſe laid before you the Deſign of this artificial *Book-keeping*, with the general Rules and Notions thereof, and have explain'd and illuſtrate the ſame in a particular Application to Merchants Accompts, ſtrictly taken. You may have ſeen how a regular Accompt is begun, carried on, and finiſhed: And to the Induſtrious, who have carefully read and impreſſed the general Notions; and alſo diligently conſidered and compared the Precepts and Examples given, it will be no Difficulty to make ſuch an Application to any other Subject of Accompts as may anſwer any reaſonable Deſign or Demand concerning the ſame. For it is impoſſible that any body who is once apprized of the Deſign and Reaſon of any Method in general, and together with this have ſeen a proper Application of Particulars, ſhould not have the Uſe of their Judgment ſo let in, as to be able to Reaſon from the Deſign of the Method, and the Matter they apply it to, for what ought to be done; and, in a Word, there is nothing here but general Rules, and the Application depends upon a judicious Reflection and Recollection of the Truth and Juſtice of firſt Principles and a prudent Foreſight of Conſequences, which is learnt by Practice, either of fictitious or real Caſes, (for they have the ſame effect, if the firſt be well choſen) after the Principles upon which that Practice depends are duly unfolded. Conſidering this with my ſelf, I could ſee no great Neceſſity of inſiſting further upon the Application of this Method, and at moſt, there can be no more required but general Hints of what is to be, or may be done upon any other Subject, to open a Tract for the Application: Nor is it neceſſary to mention every Subject; a Genius that need this, ſeems but ill affected to this Kind of Knowledge. Suppoſing therefore, any body to underſtand the preceeding general Principles, and the Application already made, I ſhall but touch upon ſome other Things which I referred to this Place, and particularly I ſhall do what more can be reaſonably demanded, to make obvious the Application to the Matter of ſome *private Accompts*, eſpecially to the Concerns of Gentlemen of Eſtates.

§ II.

§ H. THERE is one Thing must necessarly be considered, as to the Method of *Accompts*, *viz.* That the Conveniency or Inconveniency of any Method, depends upon the Nature of one's Estate or Dealings, and this ought to be consulted in the first place: For such Ways of Accompting, as in great and diffused Trade keeps out of Confusion by an artful and regular disposing of Things, if applyed to mean and narrow Dealings, will create Confusion, at least will give more Work to do than is needful: For a few Things shew themselves readily, and are examined by meer Inspection, supposing no other Method but a *Waste-Book* Record, every Corner whereof in a very simple Concern, the Accomptant's Eye is acquainted with, so as he can readly turn to what ever he wants; but this in larger *Accompts* is impossible, which makes Order, the strictest Form, and much Writing absolutely necessary. Yet this one Rule must be indispensibly observed in all Cases, *viz.* That a true and exact Memorial of every thing belonging to the *Accompt* be made, just as Things occur; and if Business encrease, so that a nearer approach to the Perfection of Accompting be necessary, then this will serve as a Ground-Work, from which you may raise the Accompt to what Form you please. In short, the least you can do will be some part of the Method already explained; for all Methods whatever are a Part of this (which comprehends the greatest Simplicity in its *Waste* and Art in the *Leger*) and as far as they come short of it, want so much of desireable Perfection; making Allowance for such Cases as not only admit, but require an Abatement of the rigour of Art, of which we may take for Example, a single Person who has no Business, but the receiving at seldom times in a Year a Sum of Money, which he lays out again for his private and personal Expences, if this Person write things in a Pocket-Book as they fall out, he can without any other Form, very easily satisfy himself how his small Affairs stand, especially if he writes down his Receipts in one Place, and his Payments in another; for what else may occur, no great matter where it stand, so be it is there. And because he may have a daily expending, therefore to make easy Work, he may put a Sum of Money once a Week in his Pocket, or lay it by it self, and take it out daily as he needs, and at the Weeks end write what is spent that Week. And if he please to come nearer the Art, he may monthly or quarterly make a digest of the Articles of Cash given out and received, collecting them under proper Denominations, as *Clothing*, which may be also subdivided, *necessary Charges of Diet*, *incidental Expences*, *Coal and Candle*, *Washing*, *House-Rent*, &c. and what other Things happen, he may methodise according to his Fancy.

ANOTHER Example of this Kind may be, *A House-keepers Accompt*, whose chief Business is receiving Cash, and giving it out again; and therefore a simple *Cash-Book* containing Receipts on one Side, and Payments on the other will serve: But if the Articles of one Kind (as Receipts) are few, and the other, (as Expences) frequent, both may be kept in one Page with double Money Columns, the one for the Receipts, and the other for the Payments; and a digest be made monthly of the Out-giving, under proper Denominations, as *Flesh*, *Fish*, *Drink*, &c. These again may be drawn into an Abstract, shewing

the

the Total of each Kind of Expences for every Month, by dividing a Page into 12 Columns, bearing the Names of the 12 Months, *January*, *February*, &c. and then in ſo many Articles upon the Margin ſet the Names of the ſeveral Heads of Expences, and againſt each under the reſpective Month, the Sum of that kind of Expences in that Month, then will the Sum of the Money in the Columns under each Month be the total Expence of that Month, and the aggregate of theſe Sums will be the Years Expences; but you may have another Proſpect of the Years Expences, by adding the Expences of a particular Kind for every Month, and ſetting the Sum in a ſeparate Column, and the Sum of that Column will alſo be the whole Years Expences. For other Things, as *Furniture*, entruſted with a *Houſe-Keeper*, there ought to be an Inventar; and it is the Truſtee's Buſineſs to keep an exact Accompt how it is diſpoſed of, which a very ſimple *Memorandum* made from Time to Time will ſerve.

THERE is another ſort of Perſons who have uſe for Accompts, but cannot reach the height of the Art, they are *Petty-Traders*, who Deal in ſome hundreds of triffling Wares, and make Sales to the Value of a Farthing or Half-penny, theſe cannot pretend to keep orderly Accompts; the beſt they can do, is to be careful that Servants do not wrong them, for they have no Accompt of Goods, and if you ask what of any Kind remains with them, they muſt go look, failing their Memory. Theſe muſt have a *Caſh-Accompt*, which they Charge once a Week with the Money received, and Diſcharge for what they give out; it is not convenient that they ſhould touch their *Caſh-Box* oftner than once a Week when it is compted, but if they do, they muſt keep a ſeparate Accompt of what they took out, to know what was received. Beſides which, they will have a common *Poſt-Book* for the Perſons with whom they Deal upon Truſt, in which they give every *Debtor* or *Creditor* an Accompt, with *Debt* and *Credit* both on one Side, either with a double Money Column, or conſtant Deductions, as the *Debts* and *Credits* ſucceed one another; but if many Articles of *Debt* and *Credit* come after other, they are not ſummed till an Article of the oppoſite Kind occur, and then the Accompt is ballanced till that Time, and the preſent Receipt or Payment ſtated; and this Book may have an *Index* to find every Accompt readily. They may alſo for the ſake of thoſe have a *Memorandum* by way of *Day-Book*, wherein all Things of this Nature are writ down, and then tranſported into the other.

THERE is another Kind of *Retailers* or *Shop-keepers* that are more conſiderable, who commonly Deal in a few different Species of Goods, as *Linnen-Drapers*, *Woollen-Drapers*, *Mercers*,&c. theſe may keep better formed Accompts, tho' there is a common Deficiency here; they keep a *Leger* for Men and Wares diſtinct, without any formal Connection or Reference of the Accompts in their ſeveral Articles, whereby there can no regular Ballane be made of ſuch Accompts. In the Accompts of Perſons, they uſe the Formality of a *Debtor* and *Creditor* Stile, which is meer Shew, without the real Value of a regular Accompt, there being no oppoſite correſponding *Debtors* and *Creditors* to be found. For their *Leger* of Ware, as they call it, contains nothing of this, and is but an imperfect Contrivance, which they ſatisfy themſelves with, to know how

how much remains: But the worſt is, in alloting Spaces for the Accompts of Wares, I know them who give no more than they ſuppoſe may ſerve for the Retail of the Quantity firſt entred on that Space, and when it is diſpoſed of, they take a new Space for a new Parcel, which in a quick Trade will be very troubleſome, and confuſed too, if any of the old Parcel remain, unleſs they tranſport it to the new Accompt. But for the more conſiderable *Retailers*, I ſee no Neceſſity drives them beſide the utmoſt pitch of Art. What if they Deal in 50 different Kinds of Goods? And beſides, Retail to the Value of a Shilling, or even Sixpence, they may purſue the Method in its Perfection with no great Trouble, at leaſt there is no Reaſon to grudge the Labour of their Servants who poſſibly have more Time lying upon their Hands than would do the Buſineſs. Beſides all this, they have frequently Ways of their own that are more troubleſome. It is no Difficulty to find what they ought to do. For any *By-Books* to ſerve particular Views of their own, I leave them to their Fancy: But I would at leaſt keep three *Grand-Books*, a *Waſte*, *Journal* and *Leger*, or two at leaſt joining the firſt two in one. Let the *Waſte-Book* contain every Thing that's done in the Shop, both the Sales in Truſt, and for Caſh, which is the only Thing ordinarly neglected, I would not have a Groats worth omitted: And to make Things eaſy for Tranſportation out of this Book, you may put all the Sales in a part of the Book by themſelves, and even put Sales upon Truſt, and for Caſh ſeparate, a very narrow Page will ſerve; and becauſe there may be other Tranſactions that will require more Room, make your Book of an ordinary Size; but what is aſſigned for theſe Sales, may be divid-in two or more Columns, for a few Words will ſerve every Article. Your *Waſte-Book* being daily filled up, in this Manner, you may tranſport it once a Week, and place every Thing to its proper Accompt: You may make your *Waſte* and *Journal* in one, by marking the *Debtors* and *Creditors* upon the Margin againſt every ſingle Tranſaction of Value: And for theſe Accompts of Sales, where the only Trouble appears to be, ſuppoſing them many and ſmall, it will be eaſily got over, by this weekly tranſporting; for now you muſt make a digeſt of theſe Articles, that is, double them again, but firſt read them over to find what Accompts they belong to, and having prepared Columns for the Purpoſe, under the Name of each diſtinct Species, writ the Quantity and Value of that Kind diſpoſed of that Week; let all the Articles belonging to the Sales for Caſh be firſt ſet down and ſummed, and then the Articles on Truſt with the *Debtors* Name after it, and ſum the whole, and ſo Matters are prepared for the *Leger*: The total Sum of each muſt be carried to the *Creditor-Side* of the Accompt in the *Leger*. —*By ſundry Accompts*; the Sum belonging to Caſh is carried to its *Debtors-Side*, and what is due by every Perſon to his Accompt; and to make the *Leger* ſhorter, take the total Caſh received that Week in one Sum, *to ſundry Accompts*; and you may do the like for Mens Accompts. Theſe Digeſts ought to be put into the *Waſte-Book*, immediately after what they belong to, with this Title — *Digeſt of this Weeks Sales*, with the Name of each Goods write *Creditor*, and againſt the Sum of the *Caſh* write *Caſh Debtor*, and ſo againſt every Perſons Name who was truſted, and

it

it will be as good as a *Journal*. And becauſe it is very convenient to have a *Caſh Accompt*, ſet a part another place of the Book, in which, by a double Money Column, write all other Receipts and Payments, the Sums of which are to be carried as oft as you pleaſe into the *Leger Accompt of Caſh*, and to the Perſons Accompts who paid or received, or the Accompt of Goods for which you paid Caſh. Theſe, and every Tranſaction of the *Waſte* being duly tranſported into the *Leger*, you have a true State of your Affairs as oft as you pleaſe, at the Coſt only of a little Pen, Ink, Paper, and ſuch Pains as will turn at laſt into a Pleaſure when you experience the Benefit of it. You may make other Diviſions in your *Waſte-Book*, as you think fit, but that it may be all as one, continue the Number of Pages thro' the whole Leaves.

Now for the *Retailer's Leger-Book*, becauſe there are commonly many Articles of *Debt* to one of *Credit*, upon Mens Accompts with whom they Deal, and many Articles of *Credit* for one of *Debt* upon Accompts of Wares, they may keep the *Debt* and *Credit* both in one Side by double Money Columns, in one of which let the *Debt*, and in the other the *Credit* be ſet. And as to Accompts of Wares, becauſe it will be too much to have a double Column for Money and Goods both, eſpecially if there happen to be more than one Species under a general Denomination, therefore the Quantities received and delivered, may go into one Column conveniently enough, providing you make a Ballance, upon every new Receipt, *i. e.* having drawn a Line under the Quantity firſt entred, all given out ſucceed in the ſame Column, and where a new Parcel is received, ſum up the former Quantities diſpoſed, and ſubſtract the Sum from the preceeding Quantity on Hand, and after the Remainder is write down, enter the new Parcel; the Gain or Loſs may be calculate and ſtated at this Time, and placed in the proper Money Column, *Debtor Column* if Gain, and *Creditor* if Loſs, and after this the Value of the remaining Part drawn out againſt it. But this may be done as ſeldom as you pleaſe, and even delay'd till you come to make a general Ballance of Accompts. The Spaces aſſigned to every Accompt of Wares, may be ſo large as to ſerve a Years Trade; and it will be no very great *Leger*, conſidering you tranſport the Sales by the Total of the whole Weeks Tranſaction, and perhaps more. Of one diſtinct Kind there may be many Species, even more than can be well brought into one Accompt. For *Example*, A *Retailer* has 40 Pieces of Broad Cloth differing in Colour or Fineneſs, which are too many for one Accompt, if you would give each a diſtinct Column; but tho this were done, I foreſee a Difficulty, for perhaps before all this is diſpoſed of, more is purchaſed, which will require new Columns, and the only and common way to diſtinguiſh ſuch Differences, is by numbering the Pieces: Now, if as many of the old Pieces are extinguiſhed as of new come in, then the ſame Columns may ſerve, by aſſigning the ſame Numbers to the new, which the old had. But if the Columns are too many, make two or more Accompts, and diſtinguiſh them by Aſſortments aſſigning from ſuch to ſuch a Number, to the 1ſt, 2d, *&c.* Aſſortment. Of which Artifice I have ſpoken in the preceeding Treatiſe, *Page* 138. And then when new Pieces come in, let them be entred upon theſe Accompts where the Quantity upon ſome Number

is

is all away, that ſo every Quantity in the ſame Column may have always the ſame Number: By this Means you'll have the Accompts reaſonably diſtinct; and when this cannot be done, make a new Accompt; but after this Method the Gain or Loſs will only appear in general upon the whole Accompt, and not upon every Piece, if theſe of different Value ſucceed upon the ſame Number, unleſs at every new Receipt the Gain or Loſs made upon the Piece diſpoſed of, be placed to the Accompt. In ſhort, when much of one's Trade lies upon few Things, it will be neceſſary by ſome ſuch Artifice, to keep many Accompts for ſeveral Species of the ſame Thing, to prevent the Confuſion of too general an Accompt; otherwiſe one Accompt may ſerve for all, and with one ſingle Column for the total Quantity of all the Pieces, which you may enter thus, *Debtor* to *Caſh* or *A. B.* &c. for 7 Pieces from No. 1. to 7, containing in all —— Yards to be put in the inner Column, and the total Value drawn out: When any is diſpoſed, narrate of what Number it is, and at the weekly Tranſportation mark the Numbers to which the Quantities diſpoſed of belonged, and when new Parcels come in, give new Numbers. By this Way, neither the Quantity remaining, nor Gain upon the Part ſold, of any particular Number will appear, but you'll find it by the Date of the *Waſte-Book*, where particular Quantities and Prices are written at large; but the *Leger* Accompt will give the total Gain or Loſs, and Quantity of all the Pieces remaining; and to diſtinguiſh the Species in order to a tranſporting the Accompt into a new Space, the *Waſte-Book* muſt be conſulted, and the particulars received compared with what are diſpoſed of.

PERHAPS you may find it convenient to conſider the Colours of the Pieces, and to make the Diſtinction that Way; all that are of one ſimple Colour, as *Red*, *Black*, *Blue*, &c. may poſſeſs diſtinct Accompts; and for mixt Colours, it will be no great Difficulty to diſtinguiſh them according to the prevailing Colour, and bring all that are upon one under the ſame Aſſortment, and into the ſame Accompt; and thus you need but one inner Column for the total Quantities, but be ſure to refer to the Numbers marked on the Pieces. From what I have ſaid here, you'll eaſily contrive proper Ways for other Things.

OBSERVE, Dealers in lower Value than what I have laſt ſuppoſed, may follow the ſame Method, if they'll take the Trouble to keep an exact *Day-Book*, and write down the ſmalleſt Sale they make. And for their *Leger*, they may have Accompts of Wares, however triffling they are, by the ſame Method of making Aſſortments. Let the more valuable Things have diſtinct Accompts; and for petty Wares, ſuppoſe they Deal in 500 of them, 50 Accompts will do their Buſineſs, Thus, let every Aſſortment have 10 Species, and to every Aſſortment an Accompt, with 10 inner Columns marked with the Names of the ſeveral Wares: And the Diſtinction of theſe which have Species under them, muſt be here neglected, except in ſo far as a reference to the *Day-Book* may clear it; and that will be done by the Date at the Tranſportation of the Accompt of Sales, whereby you'll find all the Particulars of that Total together,

and consequently with a little Pains, the Species of each, which ought to be mentioned in the *Day-Book*, and particularly in the *Digest*.

Because I have written these Things for them who I suppose have read and understand the preceeding Treatise, only for a Hint of Things, therefore I find no Necessity to make *Examples*.

§ III. THE last and chief Thing for which this Chapter was designed, is the Concerns of a *private Fortune*, or the *Dealings with landed Estates*, consisting for the greater Part in the gathering and taking up the Product of a landed Estate, and the spending or disposing of it.

I shall not use many Arguments to recommend regular accompting to Persons who visibly have so great Use for it. If there is little to do, they have less Excuse, and if there is much, they have more need of such an Art as may enable them to know readily the distinct State and Posture of their Affairs; unless they are willing to be cheated without Controul, as would be no great Difficulty, nor is it very rare with cunning and dishonest Servants who take all Advantage of their Master's Ignorance, or Negligence; and if nothing of this Kind were to be feared, is there no Pleasure for a Gentleman to know whether his Affairs prosper or go back? To know what Part of his Fortune yields best, and what Part of his Expences is greatest? That he may add and retrench as he sees most convenient: And, in a Word, so regulate his Affairs, as he may make the best he can of his Fortune, and the best Use of what he receives.

I do not propose to be very particular, yet I'll endeavour to chalk out such a Method, as will be enough to one who has the least Talent at Thinking, and has examined the preceeding Treatise with reasonable Care. And to execute my Design with best Advantage, I take for *Example*, A *Gentleman* of a *plentiful Fortune*, whom I shall suppose willing to bestow Time and Pains in keeping *regular Accompts* of his Concerns, upon prospect both of Pleasure and Profit from his Labour. The subject Matter of the Accompts to be kept is, in general, the Product of his Estate, and the disposal thereof. But there are many accomptable Branches here, so that a mere *Cash-Accompt* of Receipts and Expence will not serve: For I shall suppose a Gentleman is concerned with *Rents*, which he either gathers himself, or by Factors or Bayliffs, who are accomptable to him; with the Management of *Lands in Hand*; with *Intereſt Money* received or paid, or both; with *House-keeping*, which he ought to take Accompt of; with the ordinary and extraordinary *Expences* of his Retinue and Pleasures, *&c.* Now there are many necessary Demands to be made concerning these Branches of his Business; for it is fit he should know at all Times (or have it in his Power with a little Pains to know) what his Tenents owe; how his Factor or Steward's Accompts stand; how it is with his Farms and Stock in Hand; what his Expences of every Kind are, *&c.* all which may be resolved by an orderly Method, and so that he may know as oft as he pleases how it is with the Total of his Affairs, whether his Estate advances

or

or goes back: And the chief Encouragement to this Work is, That by a regular Accompt, where every Thing is carefully recorded, a Man can discover what is the Occasion of his Loss, what Branch has failed, and consequently he will foresee the Way to help such Misfortune for the Time to come, if the Fault was his own, and if not, it is at least a Pleasure to be conscious of this. Next, for the Method of a Gentleman's Accompts.

THE *Books necessary* to be kept, are 1st, a *great Waste-Book*, containing a plain Narration of all Things as they occur, as Receipts and Payments, every Thing given and received, and in short, whatever is done in a Gentleman's Business relating to any Thing or Person he is concerned with; out of which the following Books are made up, *viz.* 2d, which is a *Cash-Book*, containing in a simple narrative Stile, upon the *Debtor* Side, all Receipts of Money, and upon the *Creditor* all Payments; and tho there are several Articles received or paid together, belonging to the same Accompt, which are entred particularly in the *Waste*, yet they may be set down here in a total Sum: For *Example*, there is paid for divers Pieces of Houshold-Furniture, all particularly mentioned in the *Waste-Book*, yet in the *Cash-Book* there needs no more than to say, Paid for House Furniture, *&c.* This is a very necessary Book, because much of a Gentleman's Concerns runs thro' his Cash; and this Book ought to be filled up daily; and it will shew the State of Cash better, if in stead of carrying the Sums of the old Pages, into the new, you make a Ballance, and carry over the Difference to the *Creditor* Side of the new Pages, which will shew how much there was in Hand at that Time; and when any Article is thus transferred into the *Cash-Book*, make some Mark upon it in the *Waste-Book* to signifie this. In a small Concern this might be sufficient for all, because it will be no great Trouble at any Time to cast one's Eye over a few Particulars, which are distinguished by the Months wherein they occured, which a good Memory will make very useful; and may still be made more useful, by making monthly Digests, or Abstracts thereof; bringing every Article under proper Denominations; and that this may be got easily done, you may after every Article as it is set down, write immediately before the Money Column, some Letter of the Alphabet, and it will be best, to take them in Order, and set *a* to the first Article, and observe to set the same Letter to every succeeding Article of that Kind in that Month, and a new Letter to Articles of another Nature, taking the Letter *b* to the 1st Article of another Kind, and so on: This being done, both on the *Debtor* and *Creditor* Side, when you come to make your Digest, it will be very easy, for going thro' the Deburscments of that Quarter, you'll find by the different Letters, how many accomptable Branches there are, whose Denominations write down, as *House-Expences*, *Apparel*, *Servants-Wages*, *Interest*, *Books*, &c. and having collected on a by Paper, all the Sums belonging to each, as you know them by the Letter, set the Total against its proper Title; and if all these accomptable Titles be written down successively under one another, and the *Page* divided into 12 Columns, bearing upon the Top the 12 Months, then this will serve for the whole Year's Abstract, and must therefore be set in some separate Place of the Book; an Abstract of the Receipts may be made the same

Way, tho' there will not be here ſo many Branches; there will be *Land-Rents*, *Intereſt*, *Cattle* ſold, *Corn* ſold, *&c.* and obſerve, it is in your Choice how many Things you bring under one Title, ſo you may make more or leſs, according as it will be uſeful for making Things diſtinct; but this Choice muſt be determined in filling up the *Caſh-Book*. 3. There muſt be a Book of *Accompts* with Tenants, where in diſtinct Places every ones Charge and Diſcharge may be plainly and fairly written, without any great Formality of Stile; tho' you may give it the Show of a Debtor and Creditor Side, (there is another *Leger*, of which afterwards) it will be ſo much the more diſtinct; and when any Accompts have been ſtated with them, 'tis fit to carry the Balance to a new Space, or having cloſed it, and drawn Lines under, enter the Balance properly in the ſame Space, and carry it on while that can hold any Thing; the great Advantage of having Accompts thus cloſed at every Adjuſtment made betwixt Parties is, that you have no further back to go than the laſt Reckoning when you come next to Accompt with them, and this makes ſuch plain Men, as you have to do with, very eaſy, who are unwilling to go any further back. There is a 4th Book of *petty Accompts*, which a Gentleman will find neceſſary to keep with Servants and Workmen, *&c.* A 5th Book will alſo be uſeful, *viz.* of *real Accompts*, containing an Accompt of *Cattle*, *Corn*, and other Stock or Furniture, to know at all Times what one has, and how it is diſpoſed of.

Note, If a Gentleman advance no nearer to the artificial Part of Accompting, he muſt keep an Accompt with every other Perſon with whom he has dealing, and theſe may be kept in the ſame Book with his Tenants Accompts; and indeed both the laſt two Books may go in one, and you may allote diſtinct Parts for them, the laſt will take no great Room compared with the other: Theſe Books of Accompts muſt have *Indexes*.

But I ſuppoſe a Gentleman willing to go further, I ſhall therefore next more particularly ſhow how he may open and begin his Accompts in a regular Manner, in Order to their being carried on and cloſed according to Art.

1. It is neceſſary and indiſpenſible, that a Gentleman have always a clear and fair *Rent-roll* of his Eſtate; and becauſe Rents riſe and fall ſometimes, it will require that ſuch a Roll be frequently made, that the preſent State of the Rents may always appear; there is no Difficulty in making a diſtinct and clear *Rental-Book*; you may do it thus, the *Page* being divided in Columns for the following Uſes, let the Names of the Grounds and Farms be firſt upon the left Hand; in the next ſet the Name of the Tenants; then in ſo many diſtinct Columns, every Kind of Rent which is paid, as *Oats*, *Barley*, *Capons*, *Weathers*, &c. and *Money* in the laſt Place; the Columns being inſcribed with theſe Names, ſet under the Quantities payable; and it is fit you conſider all the Variety that is payable out of the whole Lands, that a Column may be made for each thro' all the *Pages* of the *Rental-Book*; for tho' the ſame Farms pay not of every Kind, yet there may be a Mixture, and then having Columns for each in every *Page*, you can more eaſily find the total Sum of every Kind, by carrying the Sum of every *Page* over to the Head of the next. And if the Lands are divided into *Mannors* or *Baronries*, then place the Name of each *Mannor*

next

next the Lands belonging to it; and if you pleaſe you may ſum each *Mannor* by it ſelf; and in this Caſe, to make your Columns, you need conſider no more than the Variety payable out of that *Mannor*. And at laſt make an Abſtract of the Whole for the Totals of each *Mannor*; the Sum of this Abſtract is the Total Year's Rent. If you pleaſe to make another Money Column, in it you may ſet the yearly Rent according to the Valuation by which publick Taxes are paid, and this you may call the Pariſh Value.

Note, In ſuch Eſtates where there is *Oats*, *Barley*, &c. paid in the Rent, the total yearly Rent is not known by the *Rental-Book* in Money Value, becauſe the Price of theſe Changes; but the true Deſign of a *Rental-Book* is no more than to know the yearly Rent, of every Species; yet if you'll ſet an arbitrary Value on every Part of the Rent, which you need only do for the Totals, then you'll have the whole in Money, which reckoning at 20 (or as many as you pleaſe) Years Purchaſe, the Sum is your *real Eſtate*, in Diſtinction from what is called the *perſonal Eſtate*, conſiſting of moveable Effects, as *Money*, *Cattle*, *Houſe-Furniture*, *Arrears of Rents*, &c.

If the Teind payable out of the Lands is included in the *Rent-roll*, it muſt be deducted from the Sum, the Remainder is the neat Rent belonging to the Maſter; but if you put that in the Rental, it is beſt to ſet it down in a ſeparate Article; and in ſumming up the Columns, keep the Rents and Teinds diſtinct.

2. To open your *Waſte-Book* in Form, there muſt be a full and exact *Inventory* made of all your *Perſonal Eſtate*, viz. *ready Money*, *Jewels and Plate*, and all Manner of Houſhold Furniture, Books and Pictures, *&c.* Stock of *Corns*, and *Cattle* upon the Grounds in Hand, Corn, Meal, *&c.* in the Granaries, and other Kind of moveable Effects, the Seed in the Ground, alſo the Stores of Proviſion of all Sorts which are at preſent in the Houſe, Money lying out upon Intereſt, and Arrears of Rents due by the Tenants, *&c. &c.*

If your Rent is all Money, or putting an arbitrary Value upon it, you may bring an Article for your *real Eſtate* into the Inventary, but this is needleſs.

Of all theſe Things you muſt make particular Inventaries, which muſt be carefully preſerved, and enter the groſs Reckonings into the general Inventaries of your *Waſte-Book*, *as* per *particular Inventary thereof*; at leaſt theſe which have numerous *Items*, as *Houſe-Furniture*, *Books*, &c.

There muſt alſo be made an exact Liſt of your Debts.

Your *Waſte-Book* being thus opened, you continue from Time to Time to write in it whatever occurs in your Affairs; and out of it be ſure daily to fill up your *Caſh-Book* as before deſcribed.

The *Book of Accompts* with the Tenants, muſt be begun aſſoon as the *Waſte-Book*; becauſe from this the Article of Arrears in the Inventary comes, which is brought there in one Total; theſe Arrears are firſt entred on the Accompt, and then the current Year's Rent upon the Debtor Side; and on the Creditor the Payments, tho' in a plain Stile. Let us before we proceed further, conſider what is the beſt Time for beginning the Accompts; if the Rent is all Money, the Beginning of the Year or of *January* will do well, and the Ac-

compt

compt of Arrears will be what's due preceeding *Martinmaſs* laſt; but when there is *Oats*, *Barley*, &c. which is commonly payable betwixt *Chriſtmaſs* and *Candlemaſs*, it will be beſt to begin the Accompts 1ſt of *March*, that there may be as little Arrears as poſſible; beſide what is reſting of *Corns*, &c. can now be charged in Money, becauſe the Term of Delivery is paſt, and before this Time, there is commonly a publick Rate ſet upon *Farm Corns*, *&c.* at which Rate the Tenants are obliged to pay to their Maſters what they failed to deliver. In each Tenants Accompt, let there be as many Columns as there are Species of Rents payable by that Tenant, with the Money Columns laſt; ſet down the Arrears of every Kind in their reſpective Columns, all in a Line, having written before it, *Arrears due preceeding* Martinmaſs *and* Candlemaſs *laſt*; or ſuppoſe it is *March* 1717, ſay, *Preceeding and for the Crop* 1716, and in the Money Columns ſet both the Arrears of Money Rent, and the Value of the other Parts; or if you pleaſe to make two Lines, ſet the Arrears of Money Rent in one, and againſt the other Things the Sum of their Values; and it will be fit to note, at what Rate every Thing is ſtated; but this done at the Beginning is ſufficient. Then to enter the current Year's Rent, you muſt make a Line for every Species payable; that the Value in Money may be orderly drawn out in Caſe the *Corns*, &c. happen to be ſold or not be delivered in due Time; tho' it will do, if all are placed in a Line: Yet becauſe the Rents will probably be paid at divers Times, which muſt be entred on the Creditor Side of the Accompt in diſtinct Articles, each with their *Date*, (for with theſe ſimple People, you cannot be too plain and particular) therefore there is no Loſs to place them in diſtinct Articles on the Debtor Side; only, take notice, the *Capons*, *Weathers*, and that Kind may go in one Line, becauſe ordinarly there is a Value agreed upon by Maſter and Tenant, in Caſe of not Delivery. Now the Arrears, being all charged in Money, come in one groſs Article of Money to the Inventary thus, *Total of the Arrears due by the Tenants preceeding, and for the Crop* 1716, *as* per *the Book of Accompts with the Tenants.*

The current Years Rent is not to be taken into the Inventary; but according as it is paid, ſo will it be entred in the Books.

3. The Book of *petty Accompts* I ſuppoſe to be carefully kept as above directed. Alſo the Book of *real Accompts*, whereby you may readily know how every Thing is diſpoſed of. But if you ſhould think it too great Trouble to enter every Thing into the *Waſte-Book*, and alſo into theſe *Digeſt-Books*, as I may call them, which are made up daily or weekly out of the *Waſte*; you may put all in one great Book, which having numbred in *Pages* in a continued Series from one End to the other, ſubdivide it, and aſſign a Part of this Book for a *Caſh-Book*, another for your *petty Accompts*, and a third for the *real Accompts*, (but the Book of Accompts with the Tenants will do as well by its ſelf, tho' it may be concluded here) and then it will be more eaſie to turn to the Place of this *Book* where Things are to be found; the Book begins with the Inventary, and the firſt Part will contain every other Thing that belongs not to the Parts now deſcribed; but this does not hinder that ſome Articles muſt be entred in more than one of theſe Books, (or rather Diviſions of the great Book)

for

for Example, I receive *Cash* from the Tenants, I must place it both in the *Cash-Book*, and that of the Tenants. To have done, if the Concerns are small, fewer Books will serve, tho' the whole in this Case will be no great Trouble; and in Concerns of great Extent, there ought no Pains to be spared. The Advantage of these *Digest-Books* is manifest, and a *general Memorial* or *Waste-Book* is very useful, because we can find in it the whole Transactions of every Week, Month, *&c.* by themselves; but especially because Things are easily written down here in a simple Manner as they occur, and sometimes in Haste, and then the Accomptant is easy, and can take his Time for filling up the other Books with more Care and Exactness.

4. To draw the whole Matter into the most perfect Form, so as we may be able to have a general Prospect of the Total, and Balance Accompts in a regular Manner, there must be added an *universal Leger* of the whole; and if you'll add a *Journal* too, it is nothing worse for that; but the Instructions for the *Journal* being only what Title of Accompts we are to use for Debtors and Creditors, we shall have these contained in the Instructions for the *Leger*; which I shall dispatch very soon, by shewing what Accompts erected in the *Leger* will comprehend a Gentleman's Business. Which are as follows.

1. ACCOMPT of the *Personal Estate*, which must contain on the *Debtor-Side* all that is owing by the Proprietar at making up the Inventary, and on the *Creditor-Side* all the Effects which at present belong to him by the Inventary. The corresponding *Creditors* and *Debtors*, are to be found in the following Accompts.

2. CASH is *Debtor* for all received, and *Creditor* for all that is given out. But the *Cash-Book* relieves this Accompt, and makes it very short, because, according to former Instructions, the *Cash-Book* is to be digested once a Month or Quarter, *&c.* as you please, and the Total only brought to the *Cash-Accompt* in the *Leger*, — *To and by sundry Accompts, as per Cash-Book*; and the several Accompts that have furnished or received that *Cash*, are to be made *Creditors* and *Debtors* in their own *Accompts* at this time. This Accompt is closed with *Balance*, being *the Cash in Hand*.

3. ACCOMPT of *Houshold-Furniture, Books*, &c. it is *Debtor* for the Total, as *per* Inventary, of all manner of Furniture, *Jewels, Books*. &c. and for all after purchased. It is *Creditor* for what's lost, destroyed, or any way disposed of, and is closed with *Balance* for the Value remaining.

4. ACCOMPT *of House-keeping*, Make it *Debtor* for all the Utensils of *Kitchen, Dairy, Brew-House*, &c. and for the Store of Provision at present in the House, as *per* Inventary, and for what's afterwards purchased, also, for all the Expences of *House-Keeping*, as Money expended, *Corn and Cattle*, &c. brought in for the Use of the House, Wages paid to Servants belonging properly to the *House-Keeping*. It is *Creditor* for what is due to the Servant of Wages at making up the Inventary, and afterwards for all the Waste which happen to be sold of that which was formerly brought in, and charged to that Accompt.

Note, A particular *Book of House-Expences* being kept, would relieve this Accompt, by bringing the Total monthly, but the *Cash-Book* perform this for

all

all *Cash* immediately expended, and therefore you'll need only a *Memorial-Book* for other Things, as *Cattle*, *Corn*, &c. furnished from your own Stock; and these Kind of Articles may be digested the same Way as the *Cash-Book*, and brought to the Accompts monthly. This Accompt is closed with *Balance* for the Utensils and Provisions remaining, and after this with *Profit and Loss* for Difference, which is the neat Expences of *House-Keeping* within the Time of the Duration of this Accompt.

5. ACCOMPT *of the Equipages*, This is an useful Accompt with very many; it is *Debtor* for the *Horses*, *Coaches*, *Furniture*, &c. which are at making up the Inventary, and for all after purchased; also for all Expences which belong properly to the Retinue, Parade, or Sport. It is *Creditor* for what Wages are due at making up the Inventary to the Servants of the Parade, as *Groom*, *Coachman*, &c. and for what Effects happen to be disposed of, which were on the *Debtor-Side* of the Accompt, it will be closed with *Balance* and *Profit*, &c. as the last Accompt.

6. IN great *House-keeping* there will be Servants entrusted with considerable Managements, and for that Effect a *Cash-Accompt* runing in their Hands, which they receive and lay out again, such as *the House-Keeper*, for this erect an *Accompt* of *Cash in the House-Keepers Hands*, *Debtor* for all he or she receives, and *Creditor* for what, by their Accompt stated, is given out. And the like for any other Servant who is in this manner entrusted, such as a *Steward* who receives Rents from Tenents, and other Sums for his Master's Behoof, and lays the same out again upon his Accompt. Such Trustees make the *Leger Accompts* very easy, because their Accompts being called for and stated once a Month, or Quarter, the State of them is to be copied into the *Waste-Book*, and then carried to the *Journal* and *Leger* in Sums under the several distinct accomptable Titles; but take notice that these Articles of *Cash* given by your self to the *Steward* or *House-keeper* were at giving them, placed in the *Cash-Book*, and carried to the *Cash-Accompt* at transporting the *Cash-Book*; but if this State is made before that Transportation, then charge *Cash in Stewards hands Debtor* for all his Receipts, particularly to *Cash* for what you gave, and then at transporting the *Cash-Book*, this must be minded that it is already done, or neglect it at posting the *Steward's Accompt*, and it will be posted at transporting the *Cash-Book*.

Note, These Accompts as they are given in will probably be rude enough, but you are to methodize them, by placing every Article under proper Denominations, to make a distinct State; in which there is no need to write every Article, but being satisfied about them, you may join in one Sum several minute Things to be placed in the *Waste-Book* (or if you please, you may make a separate Book for these stated Accompts) which must not be crowded with every *Item*, but *Items* paid or received for the same kind of Things which cannot be subdivided, put in one Sum; and to make all more clear, you may put next other all such as belong to the same Accompt in the *Leger*, and for distinctness write over them what may express the general Nature of every Sort: For *Example*, The *Steward* gives in his Accompt for one Month, wherein I find several Sums which he has received from the Tenents, these go together in

distinct

distinct Articles, and over them these Words, *Received from divers Tenents*, viz. Also I find he has received Money for *Wooll*, *Lambs*, *Butter*, *Cheese* and *Hay* sold, these go in distinct Articles, and over them written *received for several Things which belonged to the Grazing*, viz. and tho' there happen to be several *Items* in his Accompt upon each, yet I take all the *Items* in a Total, which belong to *Wooll*, or to *Lambs*, &c. and so of every Thing which has no Subdivision. Thus the Matter will be prepared for another Form, and be ready to settle more distinctly in the proper Accompts in the *Leger*, [see the *Accompt of Land-rents*, *Note*, 2. below.] In making this State, you may be less or more particular, as you please, with the Subdivisions; but it is not good either to be too tedious, or too short, the one will be confused, and the other obscure.

THUS the monthly or quarterly Accompts of these Trustees and Managers will come easily into the Books in Totals, upon the several accomptable Titles; and you'll be saved the Trouble of a Book of *House-Expences*, because whatever is spent that way is to be found in these stated Accompts, and will at last settle in the Accompts that furnish'd the several Articles, and in the Accompt of *House-keeping*, which is *Debtor* for the whole; and mind that these Accompts be all called in, and stated immediately before you Balance and close your Books: But where there are no such Servants entrusted with the whole Debursement, the Accompt must be exactly kept by the Master himself in a separate Book, and transported quarterly; which will cost him the trouble of enquiring constantly how the Money was bestowed, and what other Things were made use of; unless he will satisfie himself with a gross reckoning, as to the Money given out; but for other Things not bought, he must know them particularly for the sake of the Accompts to which they belong.

7. ACCOMPT *of the Husbandry*, it is *Debtor* for all the Seed in the Ground, Utensils and Cattle of the Plough, which at making the Inventary belong to the Lands which are kept in Hand for the Service of the Family, as most Gentlemen do keep more or less about their Seat, and afterwards for whatever is purchased and brought in of that Kind for the use of the *Husbandry*; also for Wages paid to Servants employed about this, and all other Expences of the *Husbandry*. It is *Creditor* for all the Profits made by Corns sold, also for what is taken for the *House-keeping*, and is closed with *Balance* and *Profit* and *Loss*, for the remaing Stock, and the neat *Gain* or *Loss*.

Note, THE Corns reaped off the Ground ought to be placed to the *Credit* of this Accompt, but it cannot be well done till they are Thresht, and the Product distinctly known; therefore it is best that a *Memorandum* only be made in the Book of the real Accompts of what Corns are reaped, until they are threshed, and then let the Quantities be entred in the same Book, under the Title of *Corns belonging to the Grounds about the Seat*, mentioning at such a Time so much threshed out and measured. And as these are disposed of let the Value be set on the *Creditor-Side* of the foresaid Accompt, which may be done in Totals given out within a certain Time; and for what is taken for the Use of the House, put an arbitrary Value upon it. And when you

come to a general *Balance*, you muſt put an arbitrary Value on the remaining Stock of Corns threſhed or not, and make this Accompt *Creditor* for the ſame (the *Debtor* you'll find below) then will the Accompt cloſe regularly.

8. ACCOMPT *of Grazing*, this is a Branch of what belongs to the Grounds in Hand; make it *Debtor* for the Value of all the Paſture-Stock of Cattle, which are upon the Ground at making the Inventary, *as* per *Eſtimate*; (and it may have Inner-Columns for the Species,) and afterwards for what's more purchaſed and brought to encreaſe the Stock; alſo for all Charges about the ſame, as Servants Wages particularly employed in this; it is to be made *Creditor* for all that's diſpoſed of, either ſold, loſt, or made uſe of in the Houſe, and particularly the Profit made by the *Lambs*, and other young encreaſed, as they are diſpoſed of, and the Wooll.

Note 1. THE *Dairy Profits*, as *Butter* and *Cheeſe* ſold or made uſe of, properly belong to this Accompt; and for the *Milk* uſed in the Houſe, you may put any Value on it you pleaſe, and place it to this Accompt, that the Profits may more diſtinctly appear; but you muſt alſo make the Accompt *Debtor* for all Charges of the *Dairy*, particularly the Utenſils and Veſſels.

2. FOR the *Corns*, *Straw*, and *Hay*, conſumed by the Cattle of the Paſture and Plough it needs not be ſtated; but what's taken for the Uſe of the Horſes belonging to the Parade, or conſumed any other way, ought to be placed to Accompt. And as to the *Hay*, which is thus uſed, or ſold, place it either to this, or the former Accompt, no matter which. You may ſubdivide this Accompt, if you have a mind to it, and keep one for different Cattle; this Accompt cloſes with Balance and Profit, *&c.* as the former. But firſt mind, that what Encreaſe of young remain undiſpoſed of be ſet on the *Debtor-Side* either to *Profit*, &c. or to the *per contra*, *i. e.* ſet them alſo on the *Creditor-Side*, and then they belong to the *Balance* from the *Debtor-Side*, and to the *Profit* as they are upon the *Creditor-Side*, and this Way ſhews the neat Gain by the Accompt altogether, which the other does not, tho' it is the ſame at laſt, when all are collected into the general Accompt of *Profit*, &c.

THUS in the Uſe of theſe two Accompts, you'll find the Advantage of keeping Land in Hand, and whether you make the Rent of it; for theſe ought alſo to be in the Rent-Roll at what Value you think fit, and which you may alter as it improves.

9. THE *Granary Accompt*, which may have Inner-Columns for ſeveral Species, let this be charged *Debtor* for all the *Corns* and *Meal* that is contained at making the Inventary, and all after received, particularly from the Tenants; alſo for Expences belonging thereto: And *Creditor* for what's diſpoſed.

Note, WHEN it is received, the Quantities are entred in the *Book of real Accompts*, and alſo in the Tenents Accompt who delivers it, but no Value ſet upon it till diſpoſed of, or when we come to a general Balance that the Quantity remaining muſt be valued. And mind when any of the Corns belonging to the Grounds in Hand, are turned into the *Granary*, the *Accompt of Husbandry* muſt then be made *Creditor* for it; but the Value may ſtand unfilled up, until all is diſpoſed of, or we make a Balance.

THIS

THIS Accompt is closed with Balance, for the Value remaining, and *Profit*, &c. for what's gained or lost, *i. e.* what is received more or less than it was formerly valued at in the Accompt. See *Note* 1. and 2. below.

10. ACCOMPT *of the Land-Rents*, This is a general Accompt which serves in the *Leger* for the whole Farms or Tenants, whose Book of Accompts contains all the State of Affairs with them in plain and particular manner, such as will satisfy you both at all Times; but that the *Leger* may be compleat in its Balance, and that you may have in it a perfect Prospect of the whole Years Income and Expences, and consequently of the Encrease or Decrease of the personal Estate, this Accompt must be used, which will very conveniently bring in, in compend, the Substance of the Tenants Accompts, thus, it is *Debtor* for the Arrears due at making up the last Inventary, and afterwards for all Taxes and Repairs paid or allowed to the Tenants. It is *Creditor* for all that is paid by the Tenants of their Rent, or otherwise received by the Farms, such as *Fines* or Money advanced for *Leases*.

Note 1. WHEN any Thing is received from the Tenents, the same is placed in their *Book of Accompts*, and also in the *Cash-Book*, and *Book of Real-Accompts*, for the Articles belonging to these. How the *Digests* of the *Cash-Book* are made we have already heard, so that the Money received for Rents, comes in slowly, and in few Articles to this *Accompt of Rents*: And for the *Corns* and *Meal*, it will come in perhaps slower, for the Receipts are entred both in the Tenants *Accompt-Book*, and in the Book of *Real-Accompts*; but for this, I would only transport it into the *Leger* [upon the *Granary-Accompt*, which is *Debtor* to *Land-Rents*] quarterly for what is disposed of, and then enter it at the Value for which it was sold, and what was taken for your own Use, state at any Value you please. At the same Time the *Granary-Accompt* must be made *Creditor* for the same Quantity, at the same Value, because it is disposed of and put away, the *Debtor* will be obvious, and if they are many, make it *Creditor — by sundry Accompts*. But for the *personal Debtors*, it is fit they be charged in their Accompts whenever they have bought and received it, but what goes to other Accompts comes in gross Reckonings.

2. TAXES and Repairs allowed to Tenants, are to be charged in the *Cash-Book*, as *Cash received*, and so it will be transported to the *Creditor-Side* of the *Accompt of Rents*; and immediately set on the *Creditor-Side* as *Cash* given out, and then *Accompt of Land Rents* will become *Debtor* for it; and thus the Balance is exactly preserved without any new Accompt.

3. IF the Proprietar clear the Teinds, and take up the same from the Tenants, as is practised in some places, then these Teinds come into that Tenents Accompt as a Charge upon him, and when the Proprietar pays it, the *Accompt of Rents* must be made *Debtor*.

4. IF the Tenants owe you any other Articles than Rent, as if they buy *Corn* or *Cattle* from you, it is placed to their *Accompt*, and in the Book of *Real-Accompts*; and at transporting, the Accompt of *Land-Rents* may personate the *Debtor*, and will be also *Creditor* when it is paid.

5. When you come to a general Balance, you must examine the Book of *Real-Accompts*, and transport what's undone; and for the Quantities undisposed of, charge them at the current, or any Price you please, for which the *Granary* is *Debtor* to *Land-Rents*, then will both these Accompts close. Of the one I have spoken already, and for the *Land-Rents*, close it *Creditor* by Balance for the total *Arrears of Rent*, and other Debts owing by the Tenants, which you must find by making an Abstract of the Accompts in their Books, and make *Land-Rents Debitor* to the *personal Estate* for the Sum of *Rent-Arrears*, before you make the Balance; and for what other Debts they owe, it is *Debtor* to some other Accompt, as the *Granary*, or *Accompt of Grazing* for Corns or Cattle bought, but probably this was stated in some former gross, reckoning from the Book of *Real Accompts*, and if not, it must be done now; after this the Accompt is closed with *Profit and Loss*, which is the neat Income during the Time of this Accompt. To find the total Arrears easily, and in best Order, you must make an Abstract of them in the *Book of Accompts*, thus, Take as many Pages as will serve, and having divided them in Columns for the following Uses, fill them up from the Balance of the *Tenents Accompts* thus. In the first Column on the left Hand, set the Persons Names, and after it the Word *For*, which will construct with the Name of the Ground he possesses, to be put in the next Column. Then in the next, set the Total of the *Debtor-Side* of his Accompt in Money Value (which must now be put on every Thing due) both the Arrears due at commencing the Accompt and the Years Rent run since; (or if you please, give one Column for the last Arrears, and another for the said Years Rent, and draw both into a Total in another Column.) In the next place, the Sum of the Discharge; or divide this into severals, in one place the Sum of the Money and other Things delivered, according as they are valued; in another the Taxes allowed, and in another the Repairs allowed, and then draw all these into a Total in another Column. After which follows the Remainder or Arrears due.

11. There must be an *Accompt* erected for every other *Person* with whom you Deal, *Debtor* for what they owe you, and *Creditor* for what you owe them, this especially when your Concerns with them is considerable, as when Money is borrowed or lent upon Interest, or when Annuities or Pensions are owing, or when great Quantities of Corns and Cattle are sold on Trust.

But there are several Accompts which may be constantly running in small Articles with Tradsmen and Retailers, it is enough if these are kept in the *Book of Petty Accompts*, and as the Payments are made they are placed, both here and in the *Cash-Book*, and from this transported into the *Leger*; but at making a general Balance, this Book must be examined, and an Abstract made of what remains due, and carried in a Total to the *Leger*, for which make the *personal Estate Debtor* to *Accompt of sundry Persons* for several small Debts owing, as *per* Book of *Petty Accompts*. It would be too much Trouble to digest the Articles, and carry them to the several Accompts for which they are owing, it is as well for the purpose of balancing the Book to charge the

personal

perſonal Eſtate for the whole; but it is better if all theſe Accompts were called for, and paid immediately before the cloſing your Accompts.

12. ACCOMPT *of Profit and Loſs*, The Nature of the Charge and Diſcharge of this Accompt is obvious; I have occaſionally ſpoken of it, in ſhewing how the preceeding Accompts are cloſed; what other Things in the Courſe of the Accompts belonged to it, will be eaſily known when they occur, ſuch as Intereſt of Money received or paid, and all manner of incident or uncertain Charges or Profits. But you may alſo ſubdivide this Accompt and leave nothing for it, till a general Balance that all come in Totals. Thus, 1. Erect an *Accompt of Intereſt Debtor* for all you pay, and *Creditor* for what you receive; but the beſt way is, to place to this *Accompt* the *Intereſts* at the Term when they are incurred or become due, and place the ſame alſo to the Perſons Accompt to, or by whom due; and when paid, charge or diſcharge them. But at making up the general Balance, it will be fit to calculate and ſtate what's incurred to that Time, (whether it is a Term of Payment or not) that the Balance may give a compleat View of the preſent State of Affairs. After this cloſe the Accompt with *Profit and Loſs*.

2. ACCOMPT *of Incidents*, which make *Debtor* for all Charges of this Kind, as Gifts, Charity, Loſſes at Game, Expence of Travel, ordinary and extraordinary Pocket Expences, *&c.* and *Creditor* for what's Gain, the Accompt cloſes with *Profit and Loſs*. It is fit the Accomptant keep a particular Accompt of theſe Things in a *Pocket-Book Memorandum*; at leaſt he ought to know the Totals, which will be eaſily done, by writing down every Sum of Money he puts in his Pocket, and expends this Way; and for what is deburſed by Servants will come in with their Accompts. But leaſt there be too many Articles of Debt againſt one of Credit, he may bring in here ſome other Articles, which he may deſire ſhould, as a Fund, ſupply theſe Expences, ſuch as ſeveral contingent *Profits* which may occur, as *Fines*, &c. However, the Accompt will not be tedious, becauſe it need be filled up only every Month or Quarter.

Note, THE Expence of Apparel, School-wages paid for Education of Children, may be placed to the *Accompt of Houſe-keeping*. To which alſo may be brought the Expence of *Orchards and Gardens*, and to the *Creditors-Side* the Profits of what's ſold out of them, and theſe Accompts the *Gardner* will keep and render quarterly, *&c.* unleſs you would have a particular Accompt for this, which make *Debtor* for all Charges, and *Creditor* for the Profits; and in this Caſe it will be fit to ſet a Value on what's furniſhed into the Houſe, and make *Houſe-keeping Debtor* for it, ſo will this new Accompt be cloſed with *Profit and Loſs* for the neat Gain or Loſs. If there be any Reaſon for a ſeparate Accompt, it is becauſe there may be ſeveral Expences about *Gardens*, which yield no Profit, but mere Pleaſure, and which the *Accompt of Houſe-keeping* has nothing to do with.

13. THE laſt is the *Accompt of Balances*, into which all the remaining Stock, Effects and Arrears of every Kind is brought to the *Debtor-Side*, and on the *Creditor* all your Debts. It is therefore an Abſtract of the total State of

Affairs.

Affairs, or of the Circumſtances of the *Perſonal Eſtate* at the Time (excepting always the current Years Rent, which is not yet due) and affords you the groſs Articles of a new Inventary, for another *Waſte-Book*. Let this *Accompt of Balance*, and *Profit and Loſs* be cloſed with the *Accompt of the perſonal Eſtate*, and then this Accompt is balanced, if all the Work be right performed, and every Thing duly tranſported from the *Subſervient-Books*, as I have all along directed.

Note, In making up your new Books, the particular Inventaries muſt be renewed, becauſe there may ſome Alterations have happened to them, which is eaſily found by the Books.

You may poſſibly complain of the tedioufneſs of the Method here preſcribed, becauſe there muſt be ſo many Books kept; but this Mountain is ſoon removed, if you'll conſider that the *Waſte-Book* is the leaſt any prudent Man can do; the *Digeſts* made out of it are apparently the greateſt Trouble, and yet you ſee by the Nature and Uſe of them, how much they would be amiſſing; and I have propoſed how the *Waſte-Book* may be abridged, tho' the Pains, I think, will be but ill ſaved. Then for the *Leger*, it's manifeſt by the Deſcription I have given of the Accompts, how eaſy and compendious it will be, becauſe moſt of theſe Things which have multitudinous *Items*, are brought here in Totals; ſo that this Book is chiefly deſigned for giving a neat, clean, and diſtinct Abſtract of the whole Concerns when the Owner pleaſes to call for it; but that there may not be too much to do when this Demand comes, the Book is begun in Form and gradually (tho' but ſlowly) filled up, and the cloſing of the Accompts according to Art, anſwers the Demand perfectly, and will give great Satisfaction to the Party intereſted. And if Gentlemen cannot do all the Drudgery of this Work with their own Hands, they may commit it to qualified Servants, who ſhall do it by their Direction, and under their frequent Inſpection and Examination. The next, (and perhaps it will be the firſt) Complaint, is, that I have given no Examples; I own the Imagination would be favoured by this, but I deſigned the Inſtructions of this Chapter not for the lazy and indifferent, but for ſuch as would oblige me and themſelves too in a careful peruſal of the former Treatiſe; and to them I'm confident I have ſpoken very plain and intelligibly; for who has any Notion of an Accompt will eaſily conceive the Application from what is explained, and add or alter according to their Fancy, or as different Circumſtances require; For it was not to be expected that I ſhould mention every Thing, an apt Genius having once catched the Notion of a regular and artificial Accompt, and ſeen the Application in any one Inſtance, will with a little Pains, Tutor it ſelf thro' all the reſt. And it muſt be acknowledged, that every one will take his own choice in the Application of general Rules, and have ſome particular Ways which perhaps may be beſt for him; and it is but fit, that he who is to gain or loſe be the Comptroller of his own Accompts and therefore it were in vain to pretend, by numerous Applications, to foreſtall their Choice; eſpecially, becauſe an unforeſeen Circumſtance may oblige them to take a different Way; and this I ſay, not only with Re-

ſpect

ſpect to the Accompts of Gentlemen's Concerns, but whatever may require and have uſe for a perfect and regular Accompt.

THERE is a Kind of *Stewards*, who are not *domeſtick Servants*, and we call them rather *Chamberlains* or *Factors*; to whoſe Care is committed the gathering of Rents: They have a Rent-roll of what they are to receive, which they charge themſelves with; and their Diſcharge is compoſed of all that they have given to their Employer, or for his Accompt, or what has been given by the Tenants to their Maſter, or taken to the Houſe; alſo whatever Taxes or Repairs are paid or allowed to the Tenants, Lands waſte, or in Hand, (if theſe laſt are in their Rent-roll) Arrears due by the Tenants, and Corns in the Granaries, and every other Thing that ought to be allowed. I'm ready to believe theſe will draw out of the preceeding, ſufficient Inſtruction for keeping their Accompts, ſo as to be able to clear with their Employers to both their Satisfactions; and therefore I ſhall but give a very general Hint of what I would have them do.

1. A general *Waſte-Book* will be very neceſſary to contain all Matters tranſacted relating to their Maſter's Concerns under their Management.

2. OUT of this let them make a *Caſh-Book* in the Manner formerly directed; alſo a Book of *real Accompts*, that they may know what real Effects, beſides Money, they have taken the Charge of, and how it is diſpoſed of, particularly the Corn-rents, which have been delivered by the Tenants, and put in the Granaries under their Charge, to be diſpoſed and given out according to Order: And *obſerve*, if any of the Farm Corns are ſold before they are delivered, as it may happen, in which Caſe Precepts are given upon the Tenants, ordering them to deliver to the Buyer, the Tenants ſhould be ordered to take a Receipt, and produce it immediately upon the Delivery, and then let it be placed to their Accompt; put it alſo in the Book of *real Accompts*, both on the Debtor Side, becauſe it is delivered by the Tenants, and on the Creditor Side, becauſe it is alſo diſpoſed of, and then the Digeſt of this Accompt will be the more diſtinctly made: If the Factor receive the Money for theſe Sales immediately, then he enters it alſo in the *Caſh-Book*.

3. THEY muſt keep an exact Accompt with the Tenants in the Manner already directed, and with other Perſons alſo, if the Buſineſs committed to them require it.

4. IN theſe, (to which let them add other ſubſidiary Books as they pleaſe and find need) may their whole Buſineſs be comprehended, and they will be able upon a ſhort Warning, to make a fair Accompt to their Employer, which is commonly done once a Year; thus, let them go thro' the *Caſh-Book*, and make a Digeſt of it, under proper Denominations for their Maſter's Satisfaction at leaſt, who will deſire to know diſtinctly what furniſhed that Caſh, and the diſtinct Accompts for which it was expended. But in making up your Accompt, the firſt Article of Charge againſt you is the Roll of Arrears, and current Years Rent, when you entred upon the Management; therefore no more of the Caſh received goes into your Charge, but what you received upon other Accompts than Money, the reſt being in the Charge of the Rent-roll; and all

expend-

expended belongs to your Diſcharge, with which is reckoned the Taxes and Repairs paid or allowed to the Tenants. 2. The Book of *real Accompts* muſt be examined, to know what's in the Granaries undiſpoſed of, and how the reſt was diſpoſed in Order to your Diſcharge, which for this Part of the Charge in the Rent-roll, is made up of the Arrears undelivered by the Tenants, the Quantities in the Granaries, and the Total of what's diſpoſed of, which you ought to digeſt, to ſhow how it was diſpoſed, and in the Diſcharge bring it in in ſuch Manner as this, *viz. Sold to ſundry Perſons out of the Granaries*, ſo much. *Given in for the Houſe*, ſo much. *Received from the Tenants by Precepts*, &c. For the Money received by your Lord for any of the Sales, you are not concerned, he takes the Quantity ſold in your Diſcharge; and for what is paid in to you, the Quantity being placed on the Side of the Diſcharge, againſt ſo much of what is on the Side of the Charge, the Money you received for it is brought as a new Article of Charge againſt you from the *Caſh-Book*; and if any Perſon to whom you ſold your Lord's Farm Corns remains in Debt, which you'll know by their Accompt, make a Liſt of ſuch Debts, and place the Total as a Part of your Charge, and place it alſo in the Diſcharge; but if you only are accomptable to him for theſe, the Charge ſtands againſt you, and the Debtors fall in your Hand. It is the ſame Caſe in all the Steps, when you buy the Corns from your Lord, to diſpoſe again for your own Accompt. 3. You muſt for your Lord's Satisfaction make an Abſtract of the Tenants Accompts in the Manner above directed, that he may ſee diſtinctly how the Article of Arrears is made up; of the Arrears of Corn Rent I have ſaid already. The Arrears of Money Rent muſt alſo be brought to the Diſcharge in a diſtinct Article, and the Rents of Lands waſte, and upon Hand; (when theſe are put in the Charge) your Years Salary makes up the laſt Article of your Diſcharge.

YOUR Accompt of Charge and Diſcharge being thus made up, and the proper Vouchers of each Article produced, which are your Books and Papers, the Balance ſhews what you have expended in your Lord's Service more than you received, or what you are in his Debt by your Intromiſſions.

BUT if you would gradually prepare your ſelf for this Compt and Reckoning, beſide all that's formerly directed, you muſt have a *Leger*, in which a few general Accompts being kept, into them the Articles of your Charge and Diſcharge may be brought in monthly or quarterly Totals from the other Books, and then they will be eaſily drawn into one Accompt, containing the whole State of Charge and Diſcharge; to perform this, let your *Leger* contain theſe Accompts, *viz.* 1. *An Accompt for your Lord*, which will require a great Space, becauſe this will be the Accompt where all will terminate at laſt: Make it Creditor at your Entry, for the Arrears and current Years Rent to be uplifted, and afterwards for all ſuch Articles, which, as you have ſeen above, belong to your Charge: Make it Debtor for what belongs to your Diſcharge. *Note*, The Accompt will require ſeveral inner Columns for the Species of Rents when they are many. 2. *An Accompt* of *Rents belonging to*, &c. it is Debtor for the Arrears and current Years Rent at your Entrance; and Creditor for the

Rents

Rents paid by the Tenants, and every Thing allowed to them, and muſt have inner Columns. 3. A general *Caſh Accompt*. 4. A *Granary Accompt*, Debtor for all received, and Creditor for what's given out. 5. Accompts for theſe Perſons to whom you ſell your Lord's Effects, the Debts being under your Care to call in, but you may comprehend them in a general Accompt. If you conſider carefully the Uſe of theſe Accompts, you'll eaſily ſee how to connect the Debtors and Creditors for the Articles which you enter; but moſt of them will be the Totals of ſundry Accompts, and therefore in the tranſporting theſe Totals out of the ſeveral Books, as *Caſh-Book*, and *Book* of *real Accompts*, you muſt be careful to conſider the Uſe of the *Accompts* here deſcribed, that you may make your Digeſts right, in Order to the Tranſportation. When all is tranſported, cloſe your *Leger Accompts* thus, carry the Balance of all the reſt into the firſt, and then it will be balanced: the Creditor Side will ſhew the Total of the Charge againſt you, and the Debtor Side your Diſcharge; but mind that the Balance of the *Caſh-Accompt* which goes to the Debtor Side of your Lord's Accompt, ſuppoſes you pay him that immediately, otherwiſe you remain ſo much in his Debt; or rather do this, make an *Accompt proper* to repreſent your ſelf, which make Debtor for what you buy, or take for your own Account of your Lord's Effects, and make it Creditor by him for your Salary; balancing, carry the Balance of *Caſh* into this Accompt, and then carry the Balance of this into your Lord's Accompt, which will it ſelf then be balanced; and the Article brought from your *proper Accompt* is a Debt betwixt you, the other Articles of your Diſcharge being accepted. But after all, you may perhaps find this *Leger* only ſerviceable to your own Curioſity, for your Lord may be better ſatisfied with a plain Charge and Diſcharge, according to the firſt Direction.

For the Maſter who has ſuch Stewards as I have been now ſpeaking to, he will be ſaved much Trouble in keeping Accompts with his Tenants; and the Thing he has to do is this, when he commits a Charge to his Factor, give him an Accompt in the *Leger*, and make him Debtor to the *Land-Rents* for the Arrears, (which being Debtor to the *perſonal Eſtate* for the ſame, will be at balanced, for that Article) whatever afterwards he receives from his Factor give him Credit for it, alſo for whatever he receives for Corns ſold, or any Thing got into the Houſe from the Tenants; and theſe may be filled up in Totals in the *Leger* from the particular Accompts kept of the ſame, as the *Caſh-Book*, &c. and then when the Steward renders his Accompt, whatever elſe is accepted in his Diſcharge, place to his Accompt, and to the correſponding Accompts, as *Land-Rents* for the Arrears and Salary, or *Profit*, &c. for this, the *Granary* for what remains there, *&c.* and then if there is any Balance upon his Accompt, he either clears it, or it will ſtand upon the Accompt. If his Commiſſion is continued, balance his Accompt thus, make a new Accompt for him, and charge it Debtor to the old for what he owes, or Creditor if you owe him. Alſo make it Debtor to the *Land-Rents* and *Granary*, for the Arrears and Remains which are to continue under his Management; in which Caſe when you cloſe the Accompts of your own

Book, these Articles will come into the Balance from your Steward's Accompt, and not from the Accompt of *Land-Rents* and *Granary*. But because I suppose it most convenient for a Gentleman, who loves Regularity, to call his Servants to an Audit of their *Accompts* immediately before he is to Balance his own *Leger*, therefore I would let the old Accompt of the Steward stand, and let the Balance betwixt you (his Charge and Discharge being stated as directed,) go into the *Accompt of Balances*; then will the *Accompt* of *Land-Rents* and *Granary* be closed in the Manner already said, *i. e.* the Arrears and Remains will come into the *Balance Accompt*, from these; the Quantity whereof you know, because these Accompts are made Debtor to the Factor for them; and then *Profit and Loss* takes the remaining Difference of the Accompt. So that your new Books will be opened with the same Accompts as the former were; and when the Inventary is written into the *Waste-Book*, the first Thing you do is to tell that such a Factor's Commission is continued, under whose Charge is put such Arrears, &c. and in this new Book make him Debtor to *Land-Rents*; it is the very same suppose a new Factor is employed.

If the Master please, he may demand and preserve a Copy of the Factor's Books, whereby he vouched the Particulars of his Charge and Discharge, especially of the Book of Accompts with the Tenants, which may be useful afterwards, in Case that Factor is dismissed the Service.

I may perhaps meet with an Objection against the Instructions of this §, *viz.* why so many particular Books, may not one great *Leger* contain the whole, by giving every Person and Thing an Accompt, and taking all the Particulars there as the general Rule of a *Leger* Book requires? The Answer is plain, a *Leger* Book kept according to Art must contain every Thing, but no absolute Necessity that it contain them particularly, for 'tis still a *Leger* Book if Articles are brought into an Accompt in Totals, and how particular we must be, depends upon our own Choice, which ought to be regulate by the Nature and Circumstance of the Thing; and in the present Case, besides that a Gentleman is only accomptable to himself, and therefore may do above or under the Strictness of the Art as he pleases, the Matter will not so well bear it, because, 1. You have to do with a simple Kind of People, who will require very particular and distinct Accompts, and every Thing said in the plainest Manner, therefore a separate Book with the Tenants is necessary, where their Charge and Discharge is to be set very plain and particular. 2. Most of the Accompts above-mentioned having many small *Items*, would swell the *Leger* too much; but being kept upon separate Accompts, and brought in Totals into the *Leger*, the State of Affairs becomes gradually more distinct, as they are brought into lesser Room; and the Articles of a more diffused Accompt being once adjusted, and the Matter reduced into a narrower Compass, as it is upon the Accompts of the *Leger*, before explained, a Gentleman need not be solicitous to preserve the rest; for that Book alone will satisfie him at any Time hereafter, how his Affairs stood at making up that Accompt, and even shew him, at least in gross Reckonings, upon the several Accompts, by what Steps it came to that State, which the Balance Accompt shows it was in; and this Book transmitted

to

to Posterity will sufficiently recommend the prudent Conduct of the Owner, and be an Example of Vertue and Industry to his Successors. I don't suppose however that he may immediately throw away the other Books, because Things that are brought into the Balance Accompt in gross, being to be found at large in these, they must be preserved, at least, till these Accompts are cleared, or till the State of the Accompt be adjusted betwixt Parties, in Case it be necessary to produce the Particulars; but by Degrees they lose their Use, and may at last be destroyed.

FINIS.

Books to be sold by John Paton *at his Shop in the Parliament Closs.*

MVSEVM BRITAN NICVM

TIllotson's Works in 3 Vols.
Burnet's History of the Reformation in 3 Vols.
———Exposition of the 39 Articles.
Hards's Lexicon Technicum in 2 Vols.
Tyrrel's History of England in 5 Vols.
Bailii Opus Historic. & Chronologicum.
Spotiswood's Practicks of the Law of Scotland.
Stair's Decisions in 2 Vols.
———Institutions.
Dirletoun's Doubts and Decisions.
Mackenzie's Criminals.
——— Observations on the Acts of Parl.

QUARTO.

FRezier's Voyage to the South Sea, with Cuts.
A general Treatise of the Dominion of the Sea, and a compleat Body of Sea Laws.
Gilmour and Falconer's Decisions.
Anderson against Rhind.
Littleton's Dictionary.
Salmon's History of famous Cures.
Flavel's Method of Grace.
Durham on the LIII of Isaiah.
Leibourn's Mathematical Institutions.
Dafforn's Merchant's Companion.
Histoire de L'Edit de Nantes in 5 Vols.
Jurieu Prejugez Legitimes Contre Le Papisme.
Spalding's Communion Sermons.
Rule's good old Way defended.
Nisbet on Ecclesiastes.
Brown against the Quakers.

OCTAVO & INFRA.

SIR James Stewart's Abridgement of the Acts of Parliament.
Avantures de Telemacque.
Oeuvres de Moliere in 4 Vols.
Oeuvres de Boileau in 4 Vols.
Placette Essais de Morale in 6 Vols.
Reflexions sur la Ridicule.
Bossuet Histoire Universelle in 3 Vols.
Nouveau Testament a Mons.
Traite de la Verite de la Religion Chretienne par L'Abbadie in 3 Vols.
Tacite D'Amelot in 4 Vols.
Horace de Dacier in 10 Vols.
Atkinson's Epitome of Navigation.
Boyle's Theological Works 3 Vols 8vo.
Boyer's French Grammar.
———Dictionary.
British Curiosities in Art and Nature.
Commandini's Euclid.
Bulwark stormed, in Answer to D' Laun's Plea for the Nonconformists.
Buchanani Historia.
———Psalmi.
Clerici Physica.
———Logica.
Clark's divine Authority of the Scriptures.
Cocker's Arithmetick.
Confession of Faith, with Scriptures at large. Ditto small.
Cole's Dictionary.
Dutch Fables in 2 Vols.
Echard's Roman History 5 Vols.
Kennet's Roman Antiquities.
Guthry's Treatise of Ruling-Elders and Deacons.
Gordon's Geography.
Gentleman instructed.
Grotius de Jure Belli & Pacis Gronovii.
——de Veritate Religionis Christianæ.
Hamilton's Sermons on the 8th of the Romans.
Hutchison on the CXXXIX Psalm.
Boethius de Consolatione Philosophiæ.
Mackenzie's Antiquities of the Royal Line of Scotland.
Ozanam's Mathematicks in 5 Vols.
Bibles and Psalm-Books of all Sorts.
Classicks and Translations of all Kinds.
Compleat Collection of the best and newest Maps.